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ELECTRICITY ON THE FARM *Magazine*

JANUARY, 1955

Infrared Bonus-Chick Vitality
Ponds Solve a Water Problem . .
A Fryer is Easy on the Cook . .
Pampered Pigs Produce Profits
Waxed Rutabagas are Wanted

——28th Year——

APPLIANCES ENLIST
EXTRA HELPERS
Story on Page 21

A CASE-SHEPPERD-MANN PUBLICATION

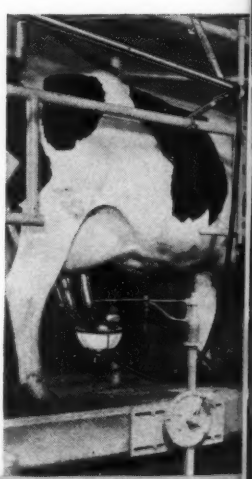
XUM

Twice a Day...Every Day...Millions of Cows get Surge TUG & PULL Milking!

If the Surge did not do a rather good job on those millions of cows, then Surge Sales would not grow and grow – not so many thousands of farmers would be switching to the Surge.

You know ahead of time just what kind of cow milking the Surge will do. You don't have to bet your money or the udders of your cows on an experiment or an imitation.

Parlors – Pipelines – Buckets . . . Surge has them all. Any machine that bears the Surge name plate does milk with genuine Surge TUG & PULL. That "genuine" is important.



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Chicago 23, Illinois

Surge

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Editor's Chat

GOODBYE TO MILK CANS

Many of you have juggled milk cans in and out of the cooler, onto and off the truck, into and out of the washing vat, onto and off of the racks, up and down the alleys, and around the milk room long enough to welcome any change that will bring relief from that assignment. Bulk cooling promises that, and along with it, fewer pails to handle, easier milking and better milk.

You have to get pretty low down to milk a cow, but it is possible, with modern milking parlors, to elevate the cow and milk standing up. You can let electric power not only extract the milk for you, but pump it from the cow to bulk milk tank, and finally help wash all the equipment.

The truckman and the man at the milk plant share in this advance and the consumer gets a dividend in better milk. Keep an eye on this change to bulk milk cooling and handling because it is coming fast. And it may involve some major changes in your farming methods. It is a very real threat to the small producer with too few cows and too small a volume to warrant the investment, or a visit from the pick-up truck. If it is going to force you out of the milk business or increase the size of your operation you might as well know about it in advance so you can plan accordingly.

It seems certain that bulk milk cooling will grow and grow fast. And you and I have to go along with the tide whether we like it or not. This is true of most changes that have taken place and there is no reason to expect the change to bulk milk cooling to be any different.

MILK BY-PRODUCTS

We just ran across some figures showing how the use of skim milk, fortified with vitamins and milk solids, has been increased by advertising. Without a doubt, it has carried along with it greater consumer use of whole milk and other milk products.

With the facilities and know-how furnished by our research labs it seems likely that a lot of new ways to process milk and use milk by-products will come along to keep abreast of the inevitable milk production increase. [Our hats are off to the dairy scientists at Iowa State College for their recent achievements in developing a frozen milk concentrate.] We might add that the production of babies, one of the best market outlets, shows no signs of declining in the near future. This, and the fact that increased use of machinery, which continues to cut production costs, sheds a ray of hope on the gloom that too often dims the view of the dairyman.

May we suggest that our dairymen readers continue to give serious thought to how increased milk by-product sales can benefit them as producers. Look at what's happened in the meat packing industry. Milk offers just as great or even greater opportunities for that sort of development.

ECONOMICS AND ELECTRICITY

It's a good idea, once in a while, to look up the definition of a word in the dictionary. Aside from being concise and definite, it also gives us a better idea of what we are talking about. The word "economics" in my Webster's is, among other things, "The science that investigates the production of wealth, or the material means of satisfying human desires". If there is any one thing that contributes more to the production of wealth and to satisfying our desires than electricity, I do not know what it may be.

It's safe to assume that all of us want more wealth, and more fun and satisfaction from spending it. It seems logical to turn to the power line as the nearest, cheapest, and most convenient way to get help in both categories.

Why not start your new year with an *economic* appraisal of the electrical equipment you now have. Then, take a real good look at your whole operation. Are you getting the fullest advantage of electrical power?

Jim Ridout

ELECTRICITY ON THE FARM *Magazine*

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Skylights over the pens provide plenty of light during daytime. Lights over center aisle provide light at night. Hot air duct, upper right, carries warmth to far end of house. Running water, gutters, and an overhead litter carrier simplify the cleanup job.

Pampered Pigs Produce Profits

Better Than 8 Weaned Feeders Per Litter From This Farrowing House

By ALLEN M. ELLISON

Leslie Myers and Son, of Route One, Kingman, Indiana, farm 600 acres of fertile land in Fountain County. As a side line, they farrow about 400 litters of pigs a year. In 1953 they sold 3,000 weaned feeding pigs to other farmers, fed out 300 for market, and kept 100 for breeding stock.

Losing pigs or a sow, in hot weather, does not spell fun or profit to any farmer. Neither does losing them in cold weather, due to chilly, damp, farrowing houses. These things were taken into consideration over seven years ago when they went into the pig hatchery business. The farrowing house they built at that time is 114′ long, 25′ wide, 13½′ high at the ridge, and 5′ high at the eaves. The central alley is 5′ wide and there are fifteen permanent farrowing pens on each side. Twenty-eight of these pens, which are 6′-8″ wide and 10′ deep, are used for farrowing. One of the others is used for washing sows and the pen across the alley from it is used for ground corn cob storage.

There is also a feed room. Feed is scooped from a wagon into a small vertical elevator which dumps the feed into a bin. Ground cobs drop from the same elevator into an auger that moves them to the cob storage pen. This small elevator saves a lot of work in handling feed and cobs. The farrowing house also has its own ¼ hp pressure water system to provide plenty of running water.

To lick the cold and dampness in the winter, the Myers use infra-red heat lamps over each sow and her litter. One infra-red lamp is suspended over each pen, at a height six inches above the standing sow's back. Ventilating fans carry off excess moisture, and supplemental heat is provided for those working in the farrowing house, as well as for the sows and pigs.

Mr. Myers says that, because of the supplemental heat, he does not find it necessary to partition a corner of the pen or provide a lamp at a lower level for the pigs. He does not use guard rails in his pens. Mr. Myers believes that a sow will nose her pigs away and will not lie down on them, if she can see where they are. To give the sows plenty of daytime light to see with, a 20″ x 26″ window is installed in the roof over each of the thirty farrowing pens. For night light, one hundred watt bulbs are installed over the central alley at the dividing wall of every other pen.

For sanitary reasons, the Myers built their pens with concrete floors, which slope toward gutters in the center alley. Pens have tile walls and steel fronts. On the floor of each pen, there is a 2″ x 4″ wedged between the two sides so that the front third of the pen is reserved for the mess of watering and feeding. The ground corn cob bedding in the back two-thirds of the pen, remains clean and dry.

Supplemental heat is provided by an automatic oil furnace in one end of the farrowing house. Heated air is forced through an overhead duct extending two-thirds of the way along the

house. A regular furnace fan, driven by a ¾ hp motor, handles this air. It circulates through the entire building and returns to the fan. The furnace is thermostatically controlled to maintain a minimum winter farrowing house temperature of 45°.

As the farrowing house is very well built, and with about thirty sows and their pigs sharing it, the air could soon become foul and heavy with moisture. To eliminate this problem, two 10 inch exhaust ventilating fans are installed in the peak of the house over the center alley. They run constantly, carrying off any excess moisture and providing one complete change of air every fifteen minutes. This combination of fresh, dry air, direct infra-red rays, and supplemental heat provides a very healthful and invigorating set of living conditions for the sows and pigs.

When summer rolls around, a different set of air conditioning problems prevail. Then the villains are heat and moisture. But the Myers are ready. Their two 10 inch fans are never turned off in the summer, and the doors at each end of the farrowing house are regulated to keep down the temperature and prevent drafts. To provide individual cooling when needed for any sow, a short petcock in the water pipe can be adjusted to make a fine spray which will settle over the sow and cool her. The ventilating fans then evaporate the excess water.

Above: Max (left) and Leslie Myers in front of their farrowing house. Note ventilators, of which there are five, at roof peak. Exhaust fans are in second and fourth. Other three provide fresh air inlets. **Left:** One of the two 10" exhaust fans. Although each has its own thermostat, they're kept operating continually. Motors are 1/20 hp providing one air change every 15 minutes.

For those few hot still days, when more ventilation is needed, the Myers have installed a ⅓ hp motor driven 30" exhaust fan to help move air through the building. With this and the two smaller fans operating, the air is changed every 3 minutes.

The Myers have never had trouble from heat in their farrowing house, even though the outside temperature has been over 100° several days every year. Max Myers said that adequate and continuous ventilation is certainly a key to profits in raising healthy pigs in a central farrowing house.

In 1953 the Myers used 8,962 kilowatt hours of electricity in their farrowing house and produced 3,400 weaned pigs. This amounts to a little less than three kilowatt hours per pig! With this, they provided heat, both from the lamps and from the furnace; ventilation; running water; and a means of handling feed and bedding.

Tile walls, a heat lamp, and plenty of good dry bedding provide ideal conditions for these pampered pigs. Note how 2" x 4" holds bedding toward back of pen.

XUM

Waxed Rutabagas Are Wanted

Simple Processing Methods Assure a Ready Market

By J. W. MACLAREN

Myron F. Mommsen, of Rice Lake, Wisconsin, owns and operates the Lazy "A" Ranch. It is located about 100 miles south of Superior, and temperatures there range from 90° above zero to 40° below. Annual average rainfall amounts to 30 inches. Back in 1947, Myron began raising rutabagas for a market demand which seemed to be increasing each year.

The rutabagas are planted around June first and harvested during October. During this period they are cultivated three times and hand-weeded and thinned once. Irrigation is normally required twice during this time.

Fertilizer, a mixture of various kinds requiring 800 to 1,000 pounds per acre, is applied once a year. A special spraying mixture is applied five times a year, at about 100 gallons an acre per spraying.

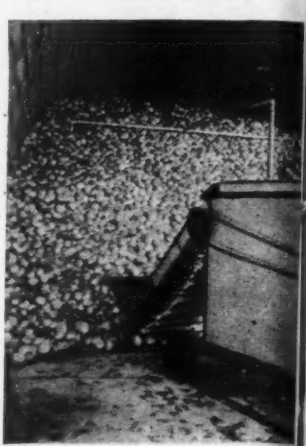
When harvest time comes, a crew of over 100 men and women are employed. Rutabagas are harvested by hand, as no mechanical harvester has yet been invented to replace man power.

Housewives and store owners want rutabagas that are clean and that have eye appeal. Too often, those in bins or on display for a few days become withered and look unappetizing. This causes a reduction in demand, resulting in losses due to throw-outs, or sales at off-market prices. So, Mr. Mommsen decided to wax his rutabagas to insure a superior product.

Myron purchased immersion type electric heaters and installed them in an insulated 60 gallon tank. This tank was mounted on a 4 wheel cart, so it could be moved wherever needed. A long heavy-duty cord was provided for connection to any one of several special convenience outlets. These are spaced along the wall of a Quonset hut, 40′ wide, 100′ long and 21′ high, that he built for storing and processing rutabagas. This Quonset, with a capacity of 800 tons, seemed large enough to handle his needs, when built.

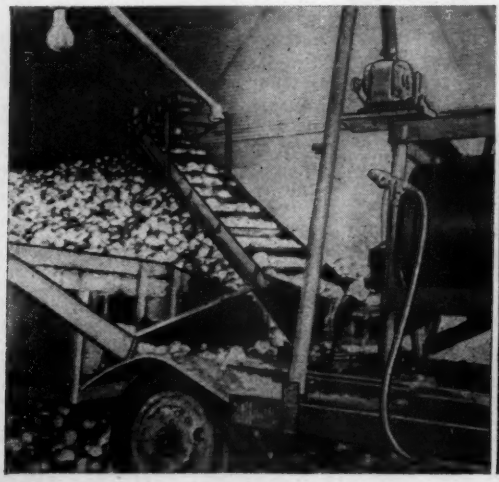
In 1952, because of increased acreage, another Quonset hut, just twice as long, was built. It has a capacity of 1,700 tons. This meant additional waxing capacity would have to be provided. More heat for the existing equipment, to give faster recovery, seemed like the best answer.

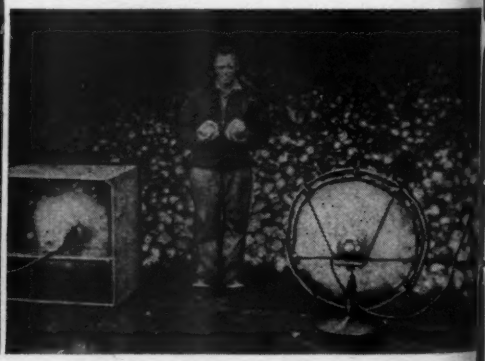
Myron decided to install four 6,000 watt immersion units to help do the job of waxing faster and to have the necessary temperatures maintained uniformly during the waxing operation. A time clock was installed on the waxing unit which, from the first day until completion of the job, automatically turns on the heating elements at 6:00 A.M. and off at 5:00 P.M. This eliminates loss of time for heating wax.



Front end of waxing unit. The hopper and conveyor elevates the rutabagas into the waxing tank.

When the loads are brought



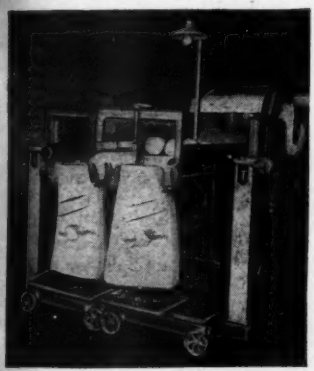


Left: A view of part of the washing tank and chassis. The conveyor is used for stock piling rutabagas in the Quonset huts. The two huts have a capacity of 2,500 tons. **Right:** Myron Mommsen at the doorway of one of the Quonsets. The two large fans help the drying so the waxing process can be started sooner.

in from the fields, they are immediately washed in a special unit made by Mommsen. It consists of a sturdy 4 wheel, trailer-mounted tank. A ½ hp electric motor, on an unloading jack, removes the 'bagas from the truck, and a 1 hp motor driven conveyor moves them along into the washing tank.

Water supply is from nearby spring-fed Meadow Creek and is pumped by a 5 hp motor driven centrifugal pump. Five hundred feet of aluminum quick-coupler type irrigating pipe, in 20 foot lengths, are used to convey the water from the creek to the washing tank. The rutabagas are carried across the length of the washing tank by a conveyor operated by a 1 hp electric motor. The continuous turbulent flow of water (water movement is at the rate of 150 gallons a minute) does a complete job of washing the rutabagas. They do not become scratched or bruised by this washing method.

Upon reaching the far end of the washing tank, an adjustable

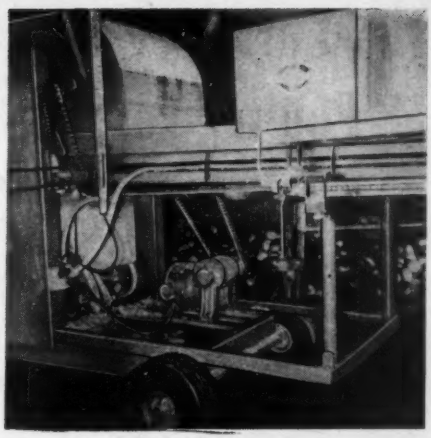


Sacking end of waxer. Rutabagas are lifted from wax bath by a conveyor, then laid on slow moving belt. By the time they reach the end, wax is dry and crop is sacked, weighed, sewed, and stacked, ready for shipment.

elevator carries the rutabagas to any part of the Quonset desired. The average unloading time of a six ton load is ten minutes. The water from the water tank is piped back into the creek, below the pump inlet.

As soon as the rutabagas are washed and stored in the Quonsets, a 5 hp centrifugal blower is turned on for drying. After

Rear of waxing unit showing motors and controls. A gear reduction unit drives the main sprocket which powers the conveyors involved. Note how the whole chassis is mounted on regular automobile wheels.



ample drying time, the waxing unit is rolled into place. The tank holds about 60 pounds of wax and the temperature is maintained at 275°. About one pound of wax is required for each 100 pounds of the vegetable, and and about 60,000 lbs. of wax (at 8¢ a lb.) are used annually.

After the 'bagas are washed, dried, and waxed, they are put into 50 lb. bags bearing the label, "Lazy 'A' Ranch". Approximately 150 acres were put into rutabagas, and last year's yield of 1,900 tons averaged about 12 to 13 tons an acre. The 1954 yield, as Myron stated, was an excellent one, the best he has had yet. The 150 acres yielded 3,000 tons or 20 tons to the acre. Both the Quonsets were filled, one with 800 tons, the other with 1,700 tons, plus 500 tons that were bagged and shipped immediately.

The market for rutabagas is quite competitive, like any other produce, but Myron has done well on this so far. He sells to wholesalers at 70¢ per 50 pound bag, which for the 3,000 tons would be a gross of $84,000. About one-third of his 3,000 ton yield this year will go to the Minneapolis, St. Paul areas; one-third to the Chicago area; and one-third to the California and Texas areas.

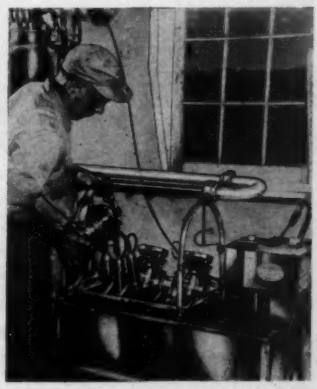
Total estimated cost of the waxing equipment was $1,200. The four heating units accounted for $250 of this amount. The balance was for motors, controls, time clock, and construction of tank and chassis of waxing unit.

New Pipeline Washer

A new high velocity washer for milk pipelines has been added to the Surge line of dairy farm equipment, made and sold by Babson Bros. Company.

This washer, called the "Electrobrain", not only cleans the pipelines, but also the milking units so the farmer is completely relieved of all scrubbing chores of any of the milking equipment, which also eliminates the possibility of any human failure to do the proper job.

The washer is controlled by a timing device which regulates each and every step of the rinse, wash, and sanitizing cycle. The high velocity of 40 gallons a minute circulating through the line and units insures efficient cleaning. The automatic control provides positive regularity and proper timing for each of the three important cleaning steps.



The Current Way of Poultry Farming

Lets Electricity Do the Heavy Work

By J. H. BODWELL

This automatic feeder supplies the entire poultry house. Note vertical sections which carry feed to upper floors. The hopper is kept full from an overhead supply.

Because of electricity, two small farms are each bringing in a good living to two complete families. These two families, the Cote's and the Fontaine's, have been in the poultry business in Derry, New Hampshire, for over twelve years, each having about 8,000 laying birds and engaged in raising hatching eggs, as well as their own replacement stock.

Last year, having benefited from experience, they decided to expand considerably and each built a poultry house designed to let mechanical equipment do most of the work, because they found that this type of labor was more efficient, economical and reliable than hired help. Before actually building these houses, they put a lot of time into checking with people who are working on such problems constantly, to get the best information they could before they started. They contacted the University of New Hampshire for construction advice and they contacted power supplier for proper wiring suggestions. An adequate entrance, not only for immediate needs but for those of the future, was laid out.

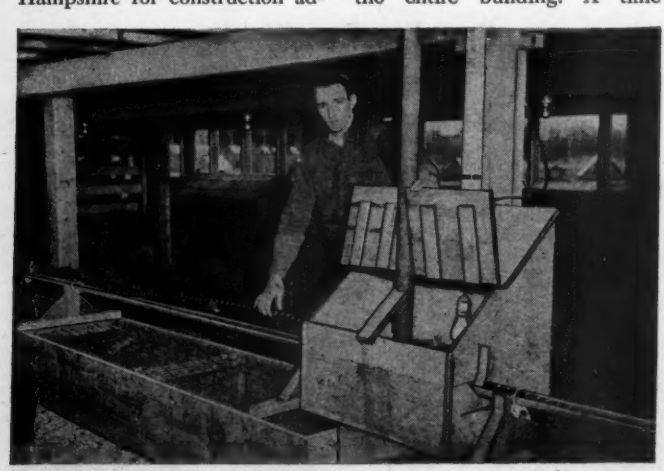
These two houses were built to eliminate almost entirely the work of carrying grain, as automatic equipment was installed for this chore. The poultry mash is delivered in bulk and on Mr. Cote's farm is blown into bins on the third floor, then goes to the hopper, from which it is automatically carried to the poultry.

The grain goes from the bin to the automatic feed hopper, located on the first floor. This unit, powered by a ¾ hp motor, furnishes feed automatically to the entire building. A time clock controls the feeding periods. They consist of 15 minutes every three hours during the 14-hour day maintained continually by the use of electric lights during the winter months.

While all grain is delivered in bulk, the mash, as previously mentioned, is blown into bins on the third floor. Pellets and scratch are carried by a bucket elevator to the top floor, from which they are delivered by gravity to each floor, where they are hand fed to the birds. Every two weeks, or when it becomes hard, the litter is broken up by an electric litter stirrer and when replaced, is removed by an electric conveyor.

Two 22-foot angle iron water troughs, with overflows to prevent flooding, were installed on each floor. These are prevented from freezing in the winter time by heating tape wrapped around the water pipe leading to the trough, then ¾ in. copper tubing wrapped in heating tape was placed in the bottom of the trough. This entire set-up is controlled by a thermostat to make it automatic. They have a float in the center of this water trough, and directly over it an infrared bulb was placed to keep the reservoir of water from freezing.

The Fontaine's water system is similar to Mr. Cote's except that over the float they built a box and in the winter time put



On the Cote Farm, the float valve is protected by a box in which a 100 watt bulb provides protective heat. Note the way heating tape is wrapped around a small copper tube to provide frost protection the full length of waterer.

in a 100 watt bulb. This bulb and the heating tape in the water trough is controlled by the same thermostat.

Waterers are Most Helpful

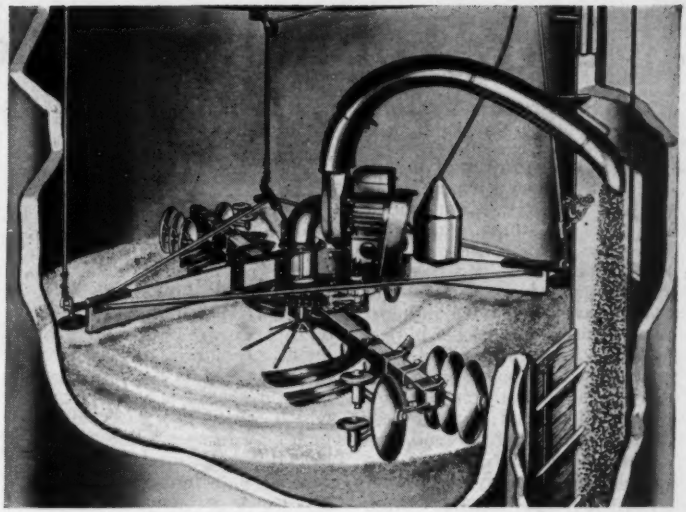
Mrs. Fontaine says that if it were possible to give greater credit to any *one* of their electrical devices, it would be to these waterers. "When you take into consideration," she continued, "that 86% of the egg white, 50% of the egg yolk and 70 to 80% of the bird's body is composed of water, you have a general idea of the importance of these waterers. With the electric pump, watering time for 8,000 birds, including cleaning, takes about one hour daily, while if carried by hand could not be done in an entire day by one man."

As on the Cote farm, all grain is delivered in bulk and Mr. Fontaine also uses automatic feeders, as well as an electric elevator which carries scratch and mash from the truck to the third floor. Grain goes into the bin and then falls by gravity to the automatic feed hoppers, located on each of the three floors.

They also have a chute on each floor and use pails to hand feed the scratch and pellets to the birds. These feeders automatically take care of the entire building, with practically no labor required. Stopping and starting are controlled by a time clock. In this way scheduled feeding, a very important factor in keeping the layers happy, is maintained.

The Fontaine's also have an electric litter stirrer and litter conveyor. In addition, the moisture content in their egg room is kept at the proper level by an electric humidifier. They also have an egg grader, which takes care of at least 8 to 10 dozen eggs in the time normally used to grade one dozen by hand. And it's more accurate.

The Cote and Fontaine families say that they use electricity not only for all the laborious work on the farm but also for electric appliances in the home, because to them electrical equipment means economy, efficiency, comfort and convenience.



Extra weight, more rugged construction and wall-to-wall booms enable this Jamesway silo unloader to cut through any silage, including frozen grass, and keep the surface even. The result is fast, trouble-free operation, longer equipment life and less spoilage.

Handle twice the cattle *easier* with Jamesway POWER CHORING

Now, you can care for twice the cattle per man — do the job easier and better — with Jamesway Power Choring. That's why it's as practical for your barn and feedlot today as the tractor in your field.

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Get details from your dealer. Let him show you how Jamesway's complete line of stalls, pens, windows and Power Choring equipment will modernize your barn for the extra income you need to maintain profits today. For free Power Choring folders, write the JAMES MFG. CO., Dept. EF-155 c/o your nearest branch office.

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Power Choring Cattle Feeder — chainless, economical delivery from silo to feed bunk.

IN THE GUTTER . . .

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FIRST IN POWER CHORING (T.M. Pend.)

Give Tobacco a Good Start

Irrigation System Provides Control of Both Moisture and Mold

By E. B. LANG

A successful grower of broadleaf tobacco is Ernest Noch, of East Hartford, Connecticut. For the past three seasons he has used an electric powered water system for irrigating and disinfecting his plant beds, and it has saved several man-hours a day during one of his busiest seasons. In addition, Noch experimented this past spring with an electric steam generator for sterilizing the soil of plant beds before planting. He found that he could short-cut an operation which had formerly been done by a commercial operator.

This Connecticut farmer raises his tobacco seedlings for 35 acres in five beds. Each is 5½ x 117 feet, covered with window sash. The seeds are planted about the first week of April, watered lightly until sprouted, then brought along carefully with frequent waterings, according to the requirements of the plants and the atmosphere. A fungicide is applied twice a week to check blue mold. The plants are set out in the fields about June 1.

The irrigating system consists of a 1,000 gallon reservoir to insure a continuous, adequate water supply, a 20 gallon per minute rotary pump driven directly by a 1½ hp electric motor, 220 volt, 3475 rpm, and a single one inch spray line running the length of each of the five beds. Spray jets set in the pipe at 30 inch intervals create a fine mist which covers all parts of the beds. Each spray line is controlled by a shut-off valve.

Watering the seedlings calls for exact judgment to apply water frequently enough to keep the soil moist at all times after the seeds sprout, without waterlogging the soil and permitting blue mold to run rampant. With his spraying system, Noch has precise control at all times. To moisten the beds, he turns the motor on, builds up to 40 to 50 pounds pressure, and sprays for two or three minutes. The operation is repeated as frequently as is required to keep the soil moist.

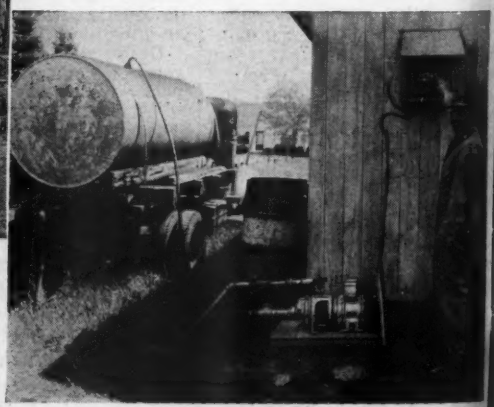
The frequency of watering is cut down when the seedlings are about two inches high. But there can be no relaxing of attention to the condition of the soil and the plants. A thorough soaking is given just before the plants are pulled, to cut losses while transplanting to a minimum.

To disinfect the beds, Noch fills two 50 gallon drums which are connected to his system, by reversing the pump. Then he mixes a suitable fungicide in the water and pumps the mold-killing solution through the spray lines to the beds.

Noch estimates that he now spends an average of 15 minutes a day in watering the seed beds in place of the five hours that he or a farm hand used to devote to the job, before, when hoses were used. The time is saved at one of the farm's busiest seasons and represents a contribution toward the year's profits far beyond the prevailing wage.

Looking at the balance sheet, Noch is well satisfied with his $1,000 investment made in the irrigating system two years ago. It has paid its way, insures him sturdy, well-grown tobacco plants for starting the field crop and has many years of useful life remaining.

This year, Noch experimented with an electric steam generator for killing weeds and various destructive organisms in the soil of his seed beds, with good results. Having on hand a high pressure steam cleaner, which he customarily uses for cleaning



Above: The spraying system serves 585 running feet of five and one-half foot beds containing tobacco seedlings. One watering takes about three minutes. **Right:** A 1,000 gallon tank insures an ample supply of water to the pump which forces the water through five one-inch spray lines at 40 to 50 pounds pressure. In the center are two 50-gallon drums which are connected to the pumping system and used twice a week when a fungicide, sprayed on the beds, kills blue mold.

For sterilizing the seed beds the jenny, at the far end, left of the bed, supplies live steam to the 5½' x 8' wheel-mounted steam pan. After 20 to 30 minutes at 85 to 90 pounds pressure, the sterilization operation kills over 90 per cent of weed seeds in the bed. When a section is completed, the pan is wheeled to the next section of unsterilized soil.

machinery, he thought the machine was capable of generating sufficient steam to do the sterilizing job. He was right!

The beds were sterilized in eight foot sections by means of a steam pan fitting over the side boards of the beds. The steam generator, running at 85 to 90 pounds pressure, raised the soil temperature to 180 degrees F in about 20 minutes. It was kept running for another ten minutes for good measure. A 200° thermometer checks soil temperature.

By early May it was apparent that the experiment was successful. It was seen that at least 90 per cent of the weed seeds had been killed by steam, equaling the results obtained by a commercial sterilizing service.

Noch's methods make it profitable for him to raise tobacco in an area where ranch houses are pushing back the tobacco plants, and where airplanes from a nearby field are heard as often as tractor motors. But with electrification, mechanization and thoughtful agricultural engineering, he finds the traditional growing of tobacco is tops.

Frozen Milk Concentrate

Dairy industry researchers at Iowa State College, Ames, have produced canned frozen milk that tastes like fresh milk. Many people say it has a fuller, richer flavor. To make it ready for table use, all you have to do is thaw it, add 2 quarts of water to 1 quart of the canned concentrate and you have 3 quarts of fresh milk to drink. Under refrigeration it could be shipped fresh anywhere that trucks or trains can run.

The college developed concentrated fresh milk several years ago. Commercial dairies in at least two cities, one in Illinois and one in Iowa, are already making and selling this milk. One dairy is selling the concentrate on rural routes near Ames. The experiment on the canning of this concentrated fresh milk began in December 1953. The object was to find a successful way to keep the concentrate in storage and to ship it long distances. The freezing work was added last summer.

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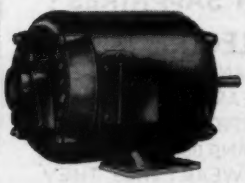

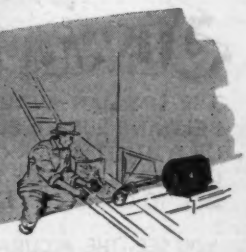

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Self-Buying Corn Drier

By JOHN S. ARNOLD

When an electrically-powered corn drying system can save a man up to $2,800.00 a year in added yields, it's time to tell the world about it.

Such a system has done just that for Oscar Bade of Ferney, S. D. Mr. Bade installed a 5 hp mechanical, unheated-air system in 1951. A six-bladed fan, rotating at 1510 rpm, is capable of forcing 24,400 cubic feet of air per minute at ½ inch static pressure through his 3,000 bushel crib.

Here's how Mr. Bade arrives at the big saving:

Because he dries out the moisture artificially, he can start picking operations early and thereby reduce potential field losses by three to seven bushels per acre. Corn-borer weakened stalks have less chance of dropping valuable ears.

Early picking also enables him to get his fall plowing completed which, Bade believes, increases his wheat yields on the same ground the following year by at least three bushels an acre.

Bade installed his system in the "soft corn" year of 1951. The six-bladed, belt driven fan is housed in the north end of a 20 by 38 foot crib and forces air through a duct running from end to end. Using unheated air it takes two to three weeks but more than pays for the gain in time and money involved, he claims.

In one recent year, for example, Bade started picking for storage on September 22 and finished around mid-October—about the time neighbors began picking for storage. He was then able to turn that ground under that same fall.

"My biggest gain in early picking," Bade confided, "is to get the stalks plowed under in the fall. This gives next year's crop of wheat a boost you don't get by discing or plowing in the spring."

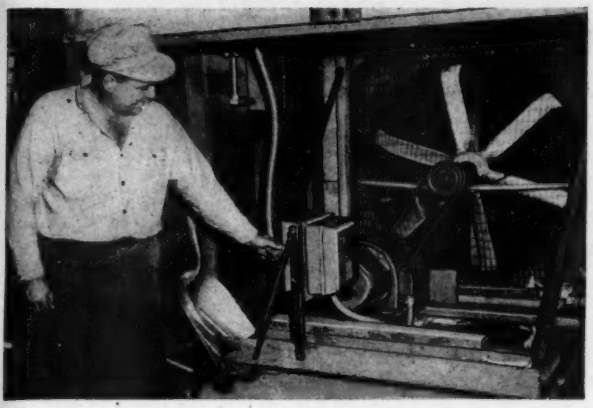
With 750 acres under cultivation, it's a big order. But mechanical drying has made it possible. The early picking-mechanical drying combination also has these advantages: cleaner picking; better weather conditions in which to work; reduction of field losses; elimination of market discounts for high moisture corn, and elimination of risks in storage.

Bade figures he paid for the system that first year of 1951. His artificially-dried crop sold for $1.55 per bushel while neighbors, suffering from soft corn, were discounted down far below this figure.

Cost of operation is moderate considering the savings involved. A crop that shelled out at 2,900 bushels at 8.7% moisture and tested 55 pounds per bushel, was originally stored at 32% moisture. It took 1,402 Kwhrs to dry it down. The average cost amounted to slightly over one cent per bushel.

Bade begins drying down ear corn several days after he begins filling the crib. Drying is hastened since the fan is capable of handling 5,000 bushels. This amounts to 2,000 bushels more than the crib capacity.

WIRED WONDERLAND
INTERESTING FACTS ABOUT THE INDUSTRY THAT SERVES YOU
JOB FOR A JEWELER
THE LINEMAN—WITH HIS CLIMBING SPURS, SAFETY BELT, AND RUBBER GLOVES—IS THE POPULAR CONCEPT OF A UTILITY WORKER. A JEWELER WOULD SEEM OUT OF PLACE—OR WOULD HE? WHO ELSE WOULD YOU GET TO CARE FOR 1¼ MILLION SAPPHIRES?
YOU SEE, THE ACCURACY OF AN ELECTRIC METER MUST BE BUILT RIGHT INTO IT—AND MAINTAINED! SO, TINY POLISHED SAPPHIRE BEARINGS ARE USED TO SUPPORT THE SHAFT OF THE REVOLVING METER DISK. BESIDES HAVING GREAT STRENGTH AND DURABILITY, THESE JEWELS HAVE HIGH RESISTANCE TO WEAR. THUS, THEY PRESENT VERY LITTLE FRICTION.
NATURAL WHITE SAPPHIRES ARE SELDOM USED NOW. CHEMISTS AND METALLURGISTS HAVE PRODUCED SYNTHETIC SAPPHIRES THAT ARE JUST AS EFFICIENT AND WHICH COST LESS. EVEN SO, THE JEWELS IN A SINGLE COMPANY'S METERS REPRESENT A HALF A MILLION DOLLARS!!



Oscar Bade at the switch for his corn drier. It takes from two to three weeks to lower the corn moisture from 35% to safe storage limits. Total cost of drying has figured just over a cent a bushel.

Since he started drying ear corn this way, he has not noticed any damage or trace of mold after the winter's storage.

The year in and year out savings in additional yields may not be as great as the $2,800 Mr. Bade figures he saved that one year. But even a fraction of the savings in money coupled with the savings in time would be well worth installing an electrically-powered, ear corn drying system.

Hopper Location Saves Labor

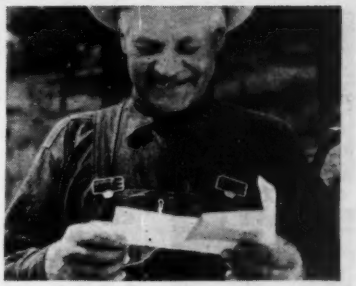
By VAN G. SUTLIFF

Everyone agrees the automatic feeder is a big labor saver for the poultryman, but selecting a good location for the feed hopper and feed storage will add greatly to its value in saving back-breaking work.

Harry Brown, Jr., finds the filling of the feed hopper a simple matter. The elevated storage platform takes no floor space and stores bags at proper dumping level.

Mr. J. T. Gibbs and his partner, Harry Brown, Jr., Washington, Missouri, have planned their feed handling to reduce heavy lifting to a minimum. A feed storage platform was built at truck-bed height in the end of the building. By opening a large door, the feed truck can back up to the storage platform and the delivery man can easily unload and stack the feed bags. The automatic feeder is located below the platform with an extended hopper protruding through the floor. There is very little work involved in opening and emptying the bags in this hopper. This platform is high enough that the floor space beneath is usable and no valuable floor space is lost.

Controls for this feeder are also conveniently located at the end of the platform, along with a convenience outlet for use in connecting an electric debeaker or other appliances.



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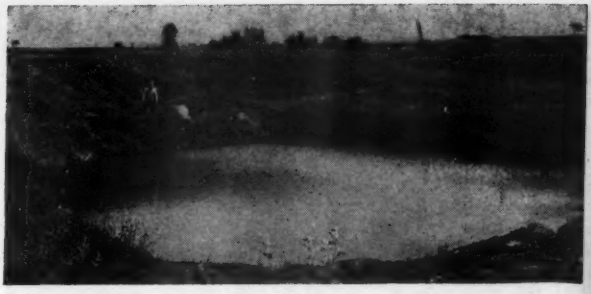

Ponds Solve Water Problem

By EARL A. PALMBERG and MILLARD FILLMORE

Frank Slead of Emporia, Kansas, has solved his stock water problem on his upland farm by the use of two farm ponds. The first pond, or "catch basin," when full, holds approximately 50 million gallons of water. After the water has collected in this pond, a riser drain pipe carries it on into the second pond. The 2" riser from the bottom of the basin allows the run-off water to drop any silt which it might be carrying.

The second pond might be considered as the final stage of the purification process in delivering clear water. This pond has a capacity of approximately 750 thousand gallons. This basin is deep, which allows a minimum of evaporation per cubic foot of storage. Fifty pounds of aluminum sulphate is added each year in the final clarification of the water in this pond.

Water is pumped from the second pond by an automatic water system (¾ hp, 600 gal. per minute) which is located in a pump house at the pond site. Water is delivered through a 1¼ inch pipe to three portable stock waterers.

Underground water pipes and buried electric cables form a network whereby the waterers can be moved from one pen to another and connected as simply as you would plug in an extension cord. Platforms on which the waterer is placed has a sloping surface towards the fence line. This keeps water from muddying stock approaches and also helps keep the platforms clean. Handy rubber hose clamp connectors are used in connecting the water from the line to the stock waterer.

Slead, being a G. I. Instructor for On-The-Job Training, finds his automatic watering system very handy. When he is away he is always sure that his 150 head of cattle and 200 hogs have an ample supply of water.

Frank Slead at one of his stock waterers. As the platform slopes toward the fence, the area around it is kept dry

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Major Thompson points out the apparent comfort of the chicks under the infrared lamps. When the picture was taken the room temperature was just 20°

Infrared Bonus-Chick Vitality

By **BRUCE FEARN**

For top egg production a healthy bird with reserve vitality is necessary. The factors of inbred laying characteristics and economic utilization of feed, while fundamental in importance, cannot bring profit unless the bird has the vitality to carry itself through its egg production schedule.

Major Ian Thompson of Bucks County, Penna., a large producer of premium eggs, learned early in the game that vitality in a laying bird is a must. He also believed that a hot house plant though perhaps good in appearance and finish usually did not have the vigor and health of those raised under more rigorous environments. Therefore, he planned his brooding program around the cold room idea.

Major Thompson tried different types of brooders and finally settled on the infra-red lamp. These he believed had advantages over other heating devices. Prominent among these advantages being safety, ease of control and perhaps most important, he could view all the chicks at one time and still not have to crawl around on the floor peering under hovers.

Immediately, he found that the chicks agreed with his choice for they liked the infra-red heat too. They not only showed it by furnishing low mortality figures, but by thriving in a fashion that was both lusty and heartening.

When the time came that roosting was desirable Major Thompson developed the idea that infra-red could be useful here too. So, to encourage the birds to get on the roost and to discourage crowding, he hung over each roosting area two infra-red lamps.

. . . . . (More on page 29)

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A Fryer is Easy on the Cook

Its Many Uses Save Time and Work

By HELENA DAVIDSON

The spicy smell of doughnuts frying met me as Mrs. Willis J. Johnson opened her door. I had planned to make a short call at this rural Becker, Minnesota, home, but we started talking about her new electric fryer-cooker. By the time we had sampled doughnuts with a cup of coffee, the afternoon was nearly gone.

"This fryer was my birthday gift," she said. "The family is so happy about the good things I prepare in it, they say it turned out to be a gift to them. Now I don't see how I got along without it. The convenience and time-saving makes fun out of cooking."

Mrs. Johnson does not limit the fryer to deep fat purposes, however delicious the doughnuts, fritters and croquettes she turns out. It sees daily duty, serving as a bun warmer, a steamer or a stew pan.

"The mashed potatoes stay fluffy and hot for the last comer since I have been using my cooker to keep them hot. I just tilt the cover to allow steam to escape, then set the cooker at simmer heat," she said.

When I left Mrs. Johnson, I had a box of sugary doughnuts on the seat beside me, plus a collection of her favorite deep-fryer recipes. Right then I made a resolution to give a strong hint for my own birthday gift as soon as I reached home.

Here are some of her recipes:

Buttermilk Doughnuts

2 eggs
1 cup sugar
2 tablespoons soft shortening
¾ cup buttermilk, or thick sour milk
1 teaspoon vanilla
3½ cups sifted flour
2 teaspoons baking powder
1 teaspoon soda
1 teaspoon salt
¼ teaspoon nutmeg
¼ teaspoon cinnamon

Put eggs, sugar, and shortening in a large bowl. Beat well. Add buttermilk and vanilla. Sift together flour, baking powder, soda, salt, and spices. Add 2 cups dry ingredients to egg mixture. Beat well. Add remaining flour and stir well. Chill.

Roll out on floured board to about one-third inch thick. Cut with floured cutter. Heat fat to 375°F. and put doughnuts in a few at a time. Turn when they rise to the surface. Brown on both sides. Lift out and drain in a paper lined pan.

Clam Fritters

2 eggs
½ cup milk
1 cup sifted flour
2 teaspoons baking powder
1 teaspoon salt
2 tablespoons melted shortening
36 drained, chopped clams

Beat eggs well and add milk. Sift flour, baking powder, and salt. Add to egg mixture. Add shortening and beat. Stir in chopped clams.

Heat fat to 370°, drop batter in by spoonfuls. Fry golden brown on both sides. Drain.

Raw Potato Cakes

2 cups grated, raw potatoes
2 tablespoons milk
1 egg, well beaten
5 tablespoons flour
½ teaspoon salt
⅛ teaspoon pepper
1 tablespoon chopped onion
¼ teaspoon baking powder

Pour milk over potatoes, stir, then drain excess milk off. Mix . . . . . (More on page 23

Mrs. William Johnson offers you spicy hot doughnuts

Good Freezer Management

Provides Dividends in Cost, Quality and Variety

By Lola H. Lehman

A frozen food locker for the home can be most convenient and useful if the homemaker follows a good management program," says Betty Vangilder, Arkansas state 4-H Club frozen food winner.

In the three years that Betty did 4-H frozen food projects she prepared 819 pounds of food for freezing; 204 pounds fruit, 104 pounds vegetables and 511 pounds meat. In addition, she learned techniques of freezing cakes, pies, cookies, sandwiches, and other cooked foods.

Betty learned many ways to get the most out of her freezer. From her experience she has developed the following suggestions:

Make a checking account out of your food bank, not a time deposit. The more food you take out, the more you can put in. This will materially reduce the cost per pound for freezing and storing foods. If the operation cost and the purchase price of the freezer is spread over a greater quantity the cost per unit is lower.

With the product sealed to moisture and vapor, Betty stores it in the freezer for future use.

Keep your freezer full. It costs less to operate a full freezer.

Keep the oldest packages of food toward the front and top of the freezer, so no food will be left in too long.

Label and date all foods put into the freezer.

Since all foods do not keep well for the same periods of time, learn the proper storage time for each product. For example, pork keeps well up to six months, but beef, properly wrapped, will keep a year.

It is good to keep an up-to-date inventory and record of foods put into the freezer and foods taken out. It is then possible to tell, at any time, just what and how much is in the freezer.

Greatest savings are made when the home freezer is used primarily for meat storage. It takes as much space to store twenty cents worth of peas as it takes to store a dollar's worth of meat.

With careful planning you still may have all the good strawberries, peaches, and fresh vegetables you need. Just don't put in so many that when the season comes again there are still frozen products in the freezer.

Use only first quality products for freezing. Remember you never take out a better product than you put in.

Do not overload your freezer with fresh meat to be frozen. You may find it better to have the freezing done at a locker plant, then store the frozen meat in the home freezer. Or plan the meat freezing work for cold weather so that the freezing of the meat can be spread over a longer three or four day period.

Small amounts of vegetables, fruits or chicken may be frozen in the home freezer at any time.

Proper packaging of foods to be frozen is most important. The foods must be sealed so that they are impervious to moisture and vapor. The "Drug Store Wrap" is a good method of sealing meat.

Betty prepares fryers for freezing. She prefers to cut the chicken ready for the pan, as thawing is more rapid, thus cutting time of preparation.

Fruit and vegetables are best put in cellophane, pliofilm, or polyethylene bags which are sealed and boxed.

Not all varieties of fruit and vegetables freeze equally well. Select those varieties that are recommended for freezing.

Be sure to occasionally read the manufacturer's instructions for operating the freezer, and *do* follow those instructions.

If something goes wrong with your freezer or the current goes off, keep the door closed. A freezer full of frozen food will hold for 48 hours, if not opened.

If you want to frost a cake before freezing it, use a confectioners sugar or candied frosting. But remember that candied frosting tends to crack after 3 or 4 weeks storage. It's not advisable to keep frosted cakes in the freezer for more than a month.

XUM

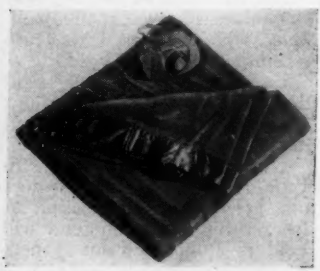
Let's Shop for Bedcovers

To Provide Warmth for Perfect Sleeping

Do you dread crawling between icy sheets when you retire for the night? This uncomfortable feeling can be erased from your life. No longer do you need to sleep in a tight ball in that area of warmth provided by body heat. With electric bedcovers you can stretch out, relax, and enjoy perfect sleeping comfort. This cozy warmth is yours without the additional weight of added covers. With automatic controls, after you have determined your own heat setting, you will be just warm enough—never too warm, never too cool, and with the same warmth all night.

Electric bedcovers are not heating pads. They are designed to provide gentle warmth in order to maintain normal body temperature for sleeping. The bed may be pre-warmed, before retiring, by setting the control at high temperature for a few minutes and then turning it back to its regular comfort setting. These bedcovers are divided into two classifications; namely, sheets and blankets.

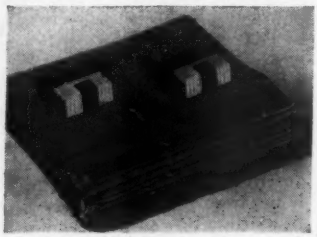
The blankets are available in a number of colors that will harmonize or contrast with bedroom color schemes. Three types of blankets are manufactured. One is a blend of napped virgin wool, for wear and warmth; rayon, for washing and drying ease; and cotton, for strength. The second, in the lower price range, is made of nylon, rayon and cotton, and the third, also an economy number, is of 100% cotton. Remember, electricity provides the warmth, so the fabric's warmth need not be considered.



General Electric—100% Cotton

The double bed size, which is 72″x84″, 85″, or 86″, has a heating area of 55″x69″ or 70″. This allows a tuck-in area without fear of damaging the wire. The twin bed size blanket is available in 66″x84″ and 66″x86″ sizes. One manufacturer makes both the wool combination and the all cotton with bottom corners contoured in mattress fitting style.

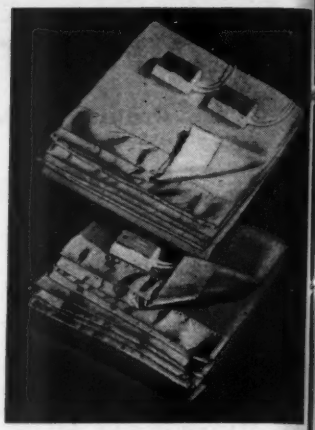
Double blankets may be purchased with single or dual control units. A single control maintains the same temperature for the whole blanket, while dual controls provide double comfort zones in the same bed cover. If one sleeper desires more warmth for sleeping, he sets his control at a higher temperature and thus is comfortable without causing discomfort for his bed partner, or a disagreement on the temperature setting.



Knapp Monarch—Wool Blend

Push or snap type switch controls have a wide range of temperatures. They are self-regulating to compensate for varying room temperatures. If the temperature drops, they will provide more warmth. Or, if the room becomes warmer, they put out less heat. Most manufacturers have installed a light in the control to tell the user when it is on.

These controls may be placed on a night table, held by a special hanger clipped to side rail of bed or headboard, or hung on wall.

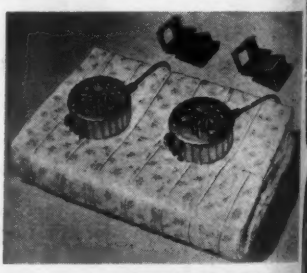


Universal—Wool Blend

Price of the blanket varies depending on its fiber content, type, and whether it has single or dual control. Prices range from $29.95 to $57.95.

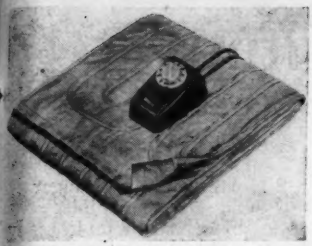
Electric sheets, like the blankets, are available in many colors. Two manufacturers make them in floral prints. Sheets come in sizes of 70″x81″ with 54″x70″ heating area and can be used on both twin and double beds.

Made of mercerized percale or broadcloth, they are easily laundered. Like the 100% cotton blanket, these were designed for year round use and to allow the homemaker to make use of blankets on hand. The same types of controls used for blankets are available for sheets.



Westinghouse—Sheet

An electric sheet is easy to handle. It is placed over the top sheet and under a lightweight blanket or quilt. Thus, with this lightweight cover, a



Tropicaire Sheet

sleeper is unhampered by heavy blankets and can turn with ease. These sheets range in price from $24.95 to $39.95.

If you buy electric bedcovers from a reputable maker you can be certain of the following:

The heating elements are copper wire wound on a core for flexibility. All parts are insulated and sealed with waterproof plastic coating. All are provided with safety devices or thermostats for protection against overheating. The electrical connection is made at a regular convenience outlet. Current feeds through the cord to the control and from there to the blanket.

Because of their moisture seals, these bedcovers may be laundered at home like any other fine bedding. However, they should never be dry cleaned! The strong solvents used would damage the seals. Our December issue had general information on washing electric bedcovers with controlled laundry equipment. Each manufacturer will provide specific laundering instructions for his own make.

So, if you've been searching for the way to a perfect night's sleep, try an electric bedcover. The snug, cozy warmth will lull you to sleep quicker than counting sheep, and will let you wake up rested and refreshed.

NEW MEAL PLANNING BOOKLET

Preparing main dishes, such as Beef Pie, Chicken Corn Casserole, Ham Turnovers, or Baked Beans to store in the home freezer can be a real time-saver and convenience for the homemaker. However, the success and tastiness of these dishes are dependent on a few "do's and don'ts."

The U. S. Department of Agriculture food specialists have just completed a series of tests on main dishes for frozen storage. Their results are now available in a booklet "Freezing Combination Main Dishes". This booklet includes recipes in 24 or 25 portions with two way directions. These include the directions for serving immediately and for freezing the remainder with preparations to be completed at serving time.

Some of their special "do and don't" suggestions are:

DO—leave vegetables and macaroni slightly underdone for freezing. If cooked well done, these foods are likely to be too soft when reheated.

DO—freeze meat pies and turnovers with pastry crusts unbaked. Crusts baked after freezing have fresher flavor and are more flaky and tender than those baked and frozen.

DO—cool quickly a cooked main dish that is to be frozen by setting the uncovered pan on ice or in very cold water. A metal pan is preferred for cooling as it conducts heat away from the food rapidly and is not likely to break. Quick cooling stops the cooking and so helps to keep the natural flavor, color, and texture of food. It also retards or prevents growth of bacteria that may spoil the food.

DON'T—add a crumb or . . . . . (More on page 24)

PASTEURIZE RAW MILK

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Only through pasteurization can you positively protect your family from diseases spread through raw, unpasteurized milk —such as undulant fever, typhoid fever, strep sore throat and polio. Just testing cows won't do it. City residents are protected by laws requiring dairies to pasteurize milk. You can give your family this same advantage in your own home.

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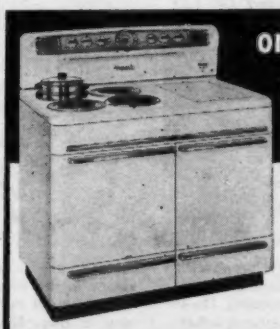
Tell your dealer you saw it in ELECTRICITY ON THE FARM Magazine



only Monarch has this stoopless oven (plus regular oven)

This amazing Monarch "Color-Vu" Electric Range has a patented "deep-heet" oven built into the range top. It's perfect for vegetable dinners, baked beans, sauerkraut and spare ribs, fowl, baking biscuits and cookies—and as a warming oven. No stooping. Just lift the cover and there's your food! Also full-size regular oven.

See your Monarch dealer or write
MONARCH RANGE COMPANY
7045 Lake Street Beaver Dam, Wis.

Save Precious Time

By Packing Lunches the Freezer Way

Freezers are wonderful time savers for the lunch packer. Precious early morning and late at night minutes can be saved by making sandwiches in quantity and freezing them. A variety can be made at one time—enough for a week or two, wrapped separately, labeled, and stored in the freezer. A frozen sandwich placed in the lunch box in the morning is just right to eat at noon.

Some fillings freeze better than others. Popular fillings that freeze well are luncheon meats, sliced or ground meats, poultry, dried beef, sea foods, sliced cheese, cheese spreads, yolks of hard cooked egg and peanut butter. They may be used separately or combined with cream cheese, creamed butter, mayonnaise, or salad dressing. If desired, sliced or chopped olives and dill or sweet pickles may be added.

Freeze only freshly prepared sandwiches and fillings. Before spreading on the filling, bread should be spread with butter or margarine, which has been softened. Mayonnaise or salad dressing should not be used as it soaks into the bread.

Lettuce, celery, tomatoes, watercress, and other crisp raw vegetables lose flavor, crispness and color when frozen. Therefore their use in frozen sandwiches is not recommended.

White of eggs become tough and jellies and preserves soak into bread during freezing. They, too, do not lend themselves to freezing in sandwich form.

Each sandwich should be tightly wrapped in moisture-vapor-resistant paper and labeled. A double thickness of heavy waxed paper may be used if the sandwiches are to be stored less than a week. In moisture-vapor-resistant paper they may be stored for 2 or 3 weeks. These sandwiches will thaw in 3 to 4 hours at room temperature and should be eaten as soon as thawed.

Following are some filling suggestions for freezer sandwiches.

Peanut Butter Filling

½ cup peanut butter
¼ cup milk or cream
8 slices crisp bacon, crushed

Combine peanut butter with milk or cream and mix until smooth. Add crushed bacon, mixing until well blended. Makes filling for 6 sandwiches.

South Seas Ham Filling

2 cups ground ham or table ready meat (12 ounce can)
½ cup drained crushed pineapple
2 tablespoons brown sugar
1 tablespoon lemon juice

Combine ham or table ready meat, pineapple, brown sugar, and lemon juice, mixing well. Makes filling for 6 sandwiches.

Liver Sausage Filling

½ pound liver sausage
3 tablespoons chili sauce
½ cup pickle relish
Dash salt

Combine liver sausage and chili sauce, mixing until smooth. Add pickle and salt and mix well. Makes filling for 6 sandwiches.

Pineapple Peanut Butter Filling

½ cup peanut butter
½ cup drained crushed pineapple

Mix ingredients and blend lightly. Makes 1 cup.

Cranberry Peanut Butter Filling

½ cup peanut butter
½ cup cranberry sauce

Combine ingredients and mix lightly. Makes 1 cup.

Relish Peanut Butter Filling

½ cup peanut butter
½ cup pickle relish
2 tablespoons thick salad dressing

Blend ingredients well. Makes about 1 cup.

Sandwiches to be frozen should be freshly prepared. Spread bread with softened butter before spreading on the filling. Use only fillings that may be frozen. Then tightly wrap in moisture-vapor-resistant paper and label with name and date.

Lunches are so easy to pack when the sandwiches are ready in the freezer. A number of different kinds in the freezer gives the lunch carrier a choice and variety from day to day. Simply remove from freezer and place in lunch box.

Mealtime is a joy to the Coursen girls. Virginia likes to make fresh hot breads as they are delicious and healthful. Mary Kay easily sets the table with clean sterile dishes from the dishwasher with no worries of after dinner dishwashing.

Appliances Enlist Extra Helpers

By RUTH BARR

The sunny kitchen in the Raymond Coursen farm home, Andover, New Jersey, is always a beehive of activity. Here Mrs. Coursen leads a busy life preparing meals and preserving foods for future use for her husband and growing family of five children. Thanks to electrical appliances in this kitchen, she finds time to assist with farm chores and community activities.

These appliances also prove to be an incentive for help from the children. The fun and ease of use makes play out of household chores. Virginia, the 12 year old daughter, likes to bake. This is a big help, as all baked products that appear on their table are homemade. Mrs. Coursen says, "I use the oven to capacity, as I find home baked breads and desserts help to 'fill up' my family with nutritious food. They are also more economical." Mrs. Coursen finds the electric range faster than her former gas range. She also finds its automatic clock helpful in starting meals when she helps around the farm. This automatic timer becomes a servant that gets dinner ready when Mrs. Coursen has shopping to do or is busy with other things.

Another kitchen appliance the children are interested in is the dishwasher. There is never a complaint at table cleaning time, since there aren't any dishes to wash or dry by hand. Mary Kay, age 8, shown on our cover, likes the ease of setting the table with the dried, sterilized dishes directly from the dishwasher.

This kitchen with its "extra hand" appliances is part of a wonderful living area located in the back and at the lowest level of their 10 room home. Other rooms included with it are a pine-panelled dining-living room, summer eating porch, laundry and freezer utility room, and bath. This area takes the general everyday living out of the upper floors.

The Coursens have found these well planned rooms an asset with a growing family. It isn't only the economy of the electrical appliances that pleases them, but also the time and labor saving convenience they provide. An added value is the interest the children take in operating them.

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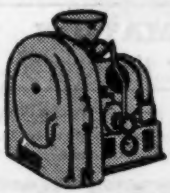

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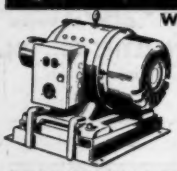

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Gathers as You Like Them

By **VIRGINIA JOHNSTON**

Making gathers need not be any more difficult than stitching a straight seam. They can be made in one of three ways, namely a sewing machine attachment, machine stitching pulled up to the correct length, and hand stitching.

The method used will depend on the fabric, length to be gathered, and whether the gathers have to be fitted to a certain length.

Gathers made by the machine attachment are uniform and the time saved is considerable. However, it is difficult always to adjust the gatherer to gather the exact desired length. Thus in shorter lengths where the gathered section must correspond in length to the piece it joins, machine or hand stitching is usually used.

Two rows of machine stitching or three rows of hand stitching are needed for smooth gathers. One row is placed where the seam will be and the other one-fourth inch from the edge. Since there is no particular advantage in using hand stitching and, of course, it takes longer, machine stitching is the recommended procedure. Lengthen the machine stitch to about 8 stitches per inch for gathering.

When adjusting the gathering, fasten the thread ends by wind-

ing a figure eight around a pin inserted in the fabric. This will secure the gathers while you measure the length of the gathered part with the garment piece to which it will be attached. It is a simple matter to pull out the pin if it is necessary to readjust the gathers.

After adjusting to the length, spread gathers evenly over the space and pin in place. Baste to hold them securely for final stitching.

Cleaner Clothes with Soft Water

To get your cotton clothes really clean when laundering in hard water, you must soften the rinse water as well as the washing water. Recent laundering tests were made in South Dakota by Lillian Lund of the Experiment Station. Because the bulk of the family wash usually is cotton material, the tests were made with cottons.

Many homemakers soften only the wash water. Women generally understand that soap unites with hard-water minerals to form the familiar soap curd or scum which clings to fabric and gives it a gray, dingy look. But many do not realize that this can happen in hard rinse water as well as in hard wash water. Clothes carry enough soap into the rinse water to form this curd and eventually become grayish. The cottons Miss Lund rinsed in hard water after a soft-water wash did not come out as clean as those rinsed in softened water.

By testing with a reflection meter, which shows exact differences in lightness and darkness of the fabric, Miss Lund found that cottons washed in soft water were more than three times as clean as those washed in hard water. Even when washing with synthetic soapless detergents, Miss Lund found that softened water had an advantage.

The harder the water, the lower the score for cleanliness, according to Miss Lund's tests. In fact, she found that hard water with the usual amount of soap does not clean clothes much better than soft water.

MARCH OF DIMES

FIGHT INFANTILE PARALYSIS

JANUARY 3-31

Easy on the Cook

. . . . . (Here from page 16)

egg, flour, salt and pepper, onion, and baking powder. Stir in potatoes.

Heat fat to 375°F. and drop mixture by tablespoonfuls. Fry until nicely browned on both sides. Drain. A breakfast treat.

Corn Fritters

2 eggs
½ cup milk
1 cup sifted flour
1 teaspoon baking powder
1 teaspoon salt
2 teaspoons melted shortening
2 cups canned, or fresh uncooked corn

Beat eggs well. Add milk. Sift flour, baking powder, and salt and add to first mixture. Add melted shortening and beat well. Stir in corn.

Have fat in cooker at 375°F., drop batter in by spoonfuls and fry until crisp and golden brown. Drain.

Boston Brown Bread

1 cup flour
1 cup corn meal
1 cup whole wheat flour
2 teaspoons soda
1 teaspoon salt
¾ cup molasses
2 cups thick sour milk

Mix flours, corn meal, soda and salt. Add molasses and sour milk. Stir until well mixed.

Fill molds or small tin cans two-thirds full. Cover with a double thickness of wax paper. Place on rack or in basket in cooker. Pour boiling water to come half way up on molds. Set cooker at 300°F. until water begins to boil, then at simmer for about 3 hours. Keep cooker covered, adding more boiling water, if necessary, during steaming. Test center of bread with a tooth-pick. If the tooth-pick comes out dry, it's done.

Beef Stew

3 tablespoons fat
2 to 3 pounds cubed beef
¼ cup flour
1 teaspoon salt
⅛ teaspoon pepper
6 carrots, sliced thick
1 cup celery, cut up
½ cup onion, cut in pieces
1 cup peas
1 teaspoon salt

Place fat in cooker, set cooker at 375°F. Combine flour, salt and pepper, and roll meat cubes in this. Add to fat, and brown, stirring occasionally.

Add boiling water to cover meat. Bring to boil, then set cooker at simmer. Cover and cook about 1 hour, or until meat is tender.

Add the vegetables and remaining teaspoon of salt. Turn heat up again until stew boils, then return to simmer. Cook an additional 30 minutes, or until vegetables are tender. Thicken gravy with flour. Serve with hot rice, dumplings, or mashed potatoes.

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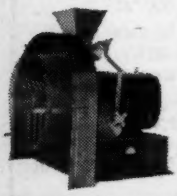

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Freeze Pecans To Prevent Rancidity

Pecans, like other nuts, keep better in their shells and in a cold temperature, according to a report of the U. S. Department of Agriculture. Cold temperatures are important for keeping shelled nuts to prevent rancidity. Pecans have a high oil content which makes them very perishable. When exposed to air and warmth, they become rancid quickly.

They will keep in the shell at room temperature for two to three months before developing a rancid taste. Tests of shelled pecans kept at 70° F. for three months showed a distinctive off flavor. However, shelled pecans kept well in a tight container at 32° F. for six months to a year.

Previously, shelled pecans have been canned to keep their freshness, but an easier way has been developed. By packing them in moisture-vapor-resistant bags or other freezer containers they may be stored in the freezer up to a year. Freezing protects them from rancidity, moisture which makes them tough and moldy, absorbing odors and flavors of other food, and from insect damage.

The vacuum packed tins of pecans protect them from rancidity. However, nut meats either in bulk or shell, preserved in the freezer or stored in the refrigerator will be usable for a longer period of time.

New Meal Planning Booklet

. . . . . (Here from page 19)

cheese topping to a food before freezing. Such toppings are best added when the food is reheated.

DON'T—hold main dishes too long in frozen storage. For tip-top quality and economical use of freezer space, two or three months in frozen storage is long enough, though most of these dishes will hold quality fairly well for six months.

Single copies of this booklet "Freezing Combination Main Dishes" (HG40) may be had by writing to Office of Information, U. S. Department of Agriculture, Washington 25, D.C.

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9295—The new line of this casual does beautiful things for your figure! The 8-gore skirt makes your waist look so small! Misses' Sizes 12-20; 40. Size 18 takes 4⅛ yards 35-inch fabric.

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IN CANADA: 60 Front Street, Toronto, Ontario.

What Would You Say?

Rhyme Contest

FUN FOR ALL—the whole family can take part in this contest.

Awards for October Contest

ELECTRICITY ON THE FARM Magazine
Helps us out in our daily routine
It brightens our days
Doesn't cost, but it pays,
? ? ? ? ? ? ?

The Winning Last Lines

FIRST PRIZE—$25 CASH

"On its counsel we constantly lean"
R. A. Lundberg
Robbins, California

SECOND PRIZE—$10 CASH

"On its pages 'watt' wonders are seen"
Mrs. T. J. Stokes
Havana, Alabama

Five Consolation Prizes $3 Each

"With 'current' ideas pictorially seen"
Mrs. Ammon G. Huber
R.F.D. 2
Peach Bottom, Pennsylvania

"With improvements for tasks that are mean"
Mrs. Arnold Beversdorf
R.F.D. 2
Shawano, Wisconsin

"'Tis a helpmate on which we can lean"
Helen Jane Couch
Shady Spring, W. Va.

"It's a boon to both oldster and teen"
Sally Koziar
R.F.D. 1
Pitman, Pennsylvania

"'Tis informative, timely and clean"
Clark A. Yoder
Salisbury, Pennsylvania

Honorable Mention

Barney H. Bennett, Sunnyside, Washington; George W. Brown, Findlay, Ohio; Mrs. P. S. Burr, Cumberland, Maine; Cecil Chamberlin, Cynthiana, Kentucky; Mrs. H. D. Fair, Indiana, Pennsylvania; Mrs. John C. Frey, Manhattan, Kansas; Mrs. Melvin Haenas, Owatonna, Minnesota; Mrs. Joseph V. Hargrave, Milan, Michigan; Mrs. Laverne E. Hasse, Loganville, Wisc.; Hayne Jones, Tamassee, South Carolina; Mrs. Edward Kahrs, Suttons Bay, Michigan; Mrs. Wm. A. Lewis, Augusta, Wisconsin; Mrs. Edward Liebenstein, Port Washington, Wisconsin; Johnie A. Matz, Harlingen, Texas; Ira Nichols, Vacaville, Calif.; Blanche Porter, Fargo, Oklahoma; Richard Richard, La Porte, Indiana; Mrs. John J. Schertz, Roanoke, Illinois; Mrs. Carson J. Sievers, Kenyon, Minnesota; Mrs. I. E. Speicher, Ligonier, Indiana; Mrs. Chas. T. Stutzbach, Egg Harbor, N. J.; Mrs. Ralph Swedlund, Galesburg, Illinois; Carl L. Weible, Oakwood, Ohio.

The idea for this month's Rhyme Contest verse was furnished by one of our readers, Helen Schatz, Route 5, Defiance, Ohio.

RULES—JANUARY CONTEST

Seven cash prizes will be awarded for the best last line to complete the verse in the coupon below. Your suggestion should rhyme with the second line.

The first prize will be $25 cash; the second prize $10. In addition, five consolation prizes of $3 each will be awarded for the best last line furnished.

In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled.

All members of the farm family to whom this magazine was sent may enter but each contestant may submit only one line.

Question "A" must be answered.

Entries must be sent to the Contest Editor, ELECTRICITY ON THE FARM Magazine, 8 So. Dearborn Street, Chicago 3, Ill., before February 10.

The decision of the judges is final and all entries become the property of ELECTRICITY ON THE FARM Magazine.

Winning names and entries will be announced in the April 1955 issue.

Send your entry on the coupon or make out a similar form on a plain sheet of paper or government postcard.

We often heard Mrs. Jones say
"I hate lugging water each day"
Were the water indoors
There'd be time for more chores
? ? ? ? ? ?

My suggestion for a last line to the above verse is:

..?.....

(A) Fill in brand name for each of the Electric Home Appliances listed below that your family now owns.

Freezer ..... **Stove** .....

Food Mixer ..... **Toaster** .....

Refrigerator ..... **Vac. Cleaner** .....

My name is.....

R.F.D......**Post Office**.....

County ..... **State**.....

for Junior Partners

4-H Electric Winners

Outstanding achievements in electric projects won expense-paid trips to the 33rd National 4-H Club Congress in Chicago for 43 of the nation's 4-H'ers.

Winners of their state awards, the 36 boys and 7 girls were selected from more than 100,000 participants in the 4-H Electric Program for which the Westinghouse Educational Foundation is the award donor. In addition to the trip, $300 college scholarships were presented to the six selected as national winners.

Presentation took place at a gala banquet, provided by the Westinghouse Corporation, and attended by 4-H club leaders, extension agents, and representatives of the power suppliers from all over the country.

Electrical projects of the various state winners included hotbeds, brooders and other equipment to increase farm production, many different types of safety and convenience devices, and such labor-saving machinery as hay choppers and grain elevators. One ingenious lad even built an electric hearing aid for his deaf dog. We only wish we had room to list all their accomplishments.

You will find, listed below, a brief resume of the records of the six national winners:

Joe Young, 16, of Rt. 1, Montgomery, Alabama, has built 10 devices for use on his father's 1,000-acre farm as part of his 4-H Electric Program. Some of these include an electric bottle cutter, a speed reducer, and an automatic pea sheller. He has also used his electrical knowledge in other 4-H projects, such as the raising of dairy calves and in wood craft. He has put this ability to practical use by establishing a business for himself, building and selling hurricane lamps and candle holders which are made from inverted halves of small-necked bottles mounted on a wood base. Joe is president of his local 4-H Club and has served as a junior leader. Active in school events, he was chosen best all-around student in manual arts at Cloverdale junior high school in 1951. He is prominent as a demonstrator of such electrical subjects as repairing small motors, how to build an electric motor, wiring and electrical safety. Joe is the son of Mr. and Mrs. E. P. Young.

Wesley Harold Jacobsen, 16, of 300 Monte Vista Lane, Petaluma, California, has put electricity to work on his sheep and beef projects with marked success. A member of 4-H for six years, he has had four years in the Electric Program. He has wired a 50-foot sheep barn and a beef barn for winter protection of his stock, converted a kale cutter to an electrified hay chopper, helped his father install an electric pump to water livestock on pasture, rewired a sheep shearing machine and built three lamb brooders. Starting with two lambs, he now has 172 head of sheep and is developing a foundation flock for his future plans of raising and selling registered breeding sheep. Included in his total income of $17,317 from 4-H projects is $3,569.31 for sale of sheep and wool and $5,184.33 in sheep prize money, plus $2,978 in sales and $290 prize money from his beef. He has had eight grand champions, 35 champions, 238 first place awards, 117 seconds, 87 thirds and more than 150 fourths and fifths. Among other uses of electricity, Wes has wired a new truck bed and installed lights; constructed a grain and hay elevator; wired three large poultry houses and converted an old alarm clock into a time clock to control all the lights; installed a two-point control yard light; repaired and rewired a bathroom heater; installed a ventilating blower in the living room; and helped neighbors install a new electric stove. Wesley, who is a junior at Petaluma High School, has been a junior leader in 4-H electric project work for two years. His many talks and demonstrations on safe wiring and lamb brooders include several television apeparances and a talk before the Pacific Coast Electrical Association conference. His parents, Mr. and Mrs. Harold Jacobsen, are leaders of the Wilson 4-H Club to which Wesley and his brother Gary, 14, belong.

Robert Leonard Rees, 18, of Route No. 1, Coffeyville, Kansas, has been a 4-H member for eight years. He has been an active member in the 4-H organization, having won a total of

Mark W. Cresap, Jr., vice president and assistant to the president of the Westinghouse Company (right) presents scholarships to (left to right) Joe Young, Montgomery, Ala.; Wesley Jacobsen, Petaluma, Calif.; Robert Rees, Coffeyville, Kansas; Charles Canada, Guilford College, N. C.; Mary Anne Foster, Poquoson, Va.; Paul Cooper Davis, South Charleston, W. Va.

one purple, 18 blue, 11 red and six white ribbons with his displays. He now is president of his club which has 29 members. In addition he is president of the County Junior Leaders' Group and has helped plan thier program. At the Coffeyville Junior College, Robert is a member of the school choir and the dramatics department. In the Electric Program, which he entered two years ago, his work has included installing five pairs of three-way switches for a new lighting system and repairing and rebuilding many electrical appliances. He has given group demonstrations and won recognition as a County Champion in this activity. He has talked before approximately 500 people at various meetings on rural electrification and has given four demonstrations and lessons on the Kansas Gas and Electric Company's wiring board. Robert currently is making a radio for his tractor that will withstand the rough treatment it will get on his 160-acre farm. In his family's house he has installed fluorescent lighting in the kitchen and utility room and has built a table lamp from cherry wood and glass brick.

Charles W. Canada, 17, Route No. 1, Guilford College, North Carolina, has spent an active and productive four years in the Electric Program. He has used 5,262 feet of wire in various electrical devices for his parents' home and for demonstrations. He has made a time switch from a tin can, clock works, magnet, wire, and friction tape—entering it in the North Carolina Academy of Sciences high school exhibit and winning $20 for first place in his division. Charles is primarily interested in the generation of electrical energy and in its distribution in home workshops, radio transmitters and receivers, and power supplies for such equipment. He installed a gas engine outside his home to substitute for electric motors should power fail in emergency conditions. In 1951, Charles won a trip to Raleigh for his electrical wizardry, and in 1952 won a watch at the North Carolina Electric Congress. The following year he won a $100 scholarship at the Congress. In 1954 he has made seven fluorescent lights, an automatic light control, four demonstration boxes, and has equipped an electric tool box and an automatic action exhibit. Charles was the 1954 county winner of the Farm and Home Demonstration contest. He has been president of his 4-H Club for three years.

Mary Anne Foster, 18, of Poquoson, Virginia, has completed 40 projects, given 96 demonstrations, won 94 ribbons and helped 26 members complete their records in eight years of 4-H Club work. In the Electric Program, she has made 45 items including nine lamps; has done all the electrical repairs around the home; has rearranged lamps and lighting to improve the appearance of rooms; has won 15 ribbons; has given four talks and 17 demonstrations including a television demonstration on the care and use of electric fans. In two years of sewing, she saved enough to buy an electric sewing machine, related her Electric project to clothing and has made 149 new articles and remodeled 44. In 1953, she was State winner in Achievement and represented Virginia 4-H girls at Rhode Island State University where she taught dramatics and recreation at 4-H camp. Since 1950 she has been assistant leader and junior leader in two clubs. Mary Anne, now attending Longwood State Teachers College, is the daughter of Mr. and Mrs. Samuel D. Foster, both 4-H Club leaders.

Paul C. Davis, 17-year-old from South Charleston, West Virginia, spent eight active years in 4-H work before entering West Virginia University this year to study electrical engineer-

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ing. In addition to the Electric Program, his projects have included handicraft, home beautification, foods, trees, and room improvement. Paul does not live on a farm, but has found many uses for electric projects in the home. He has devoted much time to home lighting, lighting in the back yard, making lamps, designing signal systems and doorbells and maintaining electric appliances. He has presented talks and given demonstrations on how to repair a cord, how to put a plug on a cord, how to make a wire display cord, and how to make a table lamp. He has won 14 blue awards and one red award during his 4-H Club work, capped by winning the 4-H Grand Award in the Southern West Virginia Fair—a $100 scholarship—for his 4-H, community, and school records. He has twice been president of his local club, of which his mother and father are leaders. He was a member of the National Honor Society at Charleston High School, was on the school's yearbook staff, and won the Bausch and Lomb honorary science award. A West Virginia state winner in citizenship, Paul was named a 1954 West Virginia All-Star. He has earned $97.75 in the Electric Program and a total of $396 for all of his 4-H projects.

Names and Addresses of 4-H Electric Program Winners

State	*Name of Winner*	*Post Office*
*Alabama	Joe Young	Montgomery
Arkansas	Nancy Neece	Fort Smith
*California	Wesley Jacobsen	Petaluma
Colorado	Melvin Evans	Denver
Connecticut	Manuel J. Misarski	Oakdale
Delaware	William Murphy	Seaford
Florida	Inez Hare	Micanopy
Georgia	Joy Hill	Winder
Idaho	Keith Gibson	Preston
Illinois	Bob Walter	Karnak
Indiana	Robert Spuller	Rushville
Iowa	Roger Diercks	Mason City
*Kansas	Robert Rees	Coffeyville
Kentucky	Nelson McCall	Lexington
Louisiana	Joyce Miller	Osyka, Miss.
Maine	William Griffin	Levant
Maryland	Joseph M. Zoller III	Ellicott City
Massachusetts	Charles Koehler	Westfield
Michigan	Monte Stuck	Elberta
Minnesota	Gerald Burmeister	Cosmos
Mississippi	Ouida Ann Brady	Liberty
Missouri	Larry Rosenbohm	Graham
Montana	Robert Woodmansey	Highwood
Nebraska	Arlan Rathe (boy)	Culbertson
Nevada	Kenneth Brown	Minden
New Hampshire	Robert Young	Portsmouth
*North Carolina	Charles Canada	Guilford College
North Dakota	Chris Leier	Kintyre
Ohio	Jay Loy	St. Clairsville
Oklahoma	Melvin Semrad	Enid
Oregon	Tony Goodrich	Portland
Rhode Island	James Taylor	Warwick
South Carolina	Herbert Richardson	Aiken
South Dakota	Robert Moe	Alexandria
Tennessee	Sammie Juanita Lee (girl)	Crossville
Texas	Marvin L. Mott	Riesel
Utah	Scott Rogers	Lewiston
Vermont	Alden Jones	Grand Isle
*Virginia	Mary Anne Foster	Poquoson
Washington	Richard Teel	Davenport
*West Virginia	Paul Cooper Davis	South Charleston
Wisconsin	Neil Kestner	Hales Corners
Wyoming	Dean Shaw	Laramie

*Denotes National Winner

Sewing Scholarship

Janet Hammer, 16, of Scales Mound, Illinois, has won third place in a national junior dressmaking contest. Janet received her award of a $500 scholarship at a fashion show of regional winners' garments in an annual contest sponsored by Singer Sewing Machine Company. She was one of the four finalists selected from a field of 32,800 contestants.

The contest was open to girls between 11 and 17 years of age. Each girl used a commercial pattern and material of her own selection. Judging was based on coordination of fabric and design, construction, workmanship, fit, and finish.

Robert McRoberts, sales promotion director of the Singer Company, gives Miss Hammer her prize of a $500 scholarship fund as a professional model (left) wearing the winning garment looks on.

Each girl winning one of the 1750 local sewing center contests received a fitted scissor set. The thirty-three winners of regional shows received Singer Slant Needle Portable Sewing Machines and had their dresses worn by professional models in the New York Fashion Show.

Besides Janet, who won the regional and then became a finalist, other rural regional winners were Betty June Smith, 16, Pulaski, Tennessee; Marlene Rahe, 17, Fredericksburg, Texas; and Lydia Lou Roper, 16, Kenfick, Oklahoma. All are active in 4-H work.

Janet Hammer lives on an 800 acre farm and is in her junior year at the community high school. Besides her home duties, she is active in the 4-H program. In this she participated in both sewing and farm projects. Part of the profit obtained from the sale of her cattle paid for the sewing course she took at her local sewing center.

Her winning dress was made of tissue organza in irridescent rose. This gave a party air to the full skirted style, scalloped neck trim, and tucking around the skirt. As a climax to her winning of the scholarship, Janet was treated to a three day sightseeing whirl of New York.

Plans are already in the making for next year's contest which will start next spring. If you are interested in this contest you can obtain information about it from your local Singer Sewing Center.

Chick Vitality

. . . . . (Here from page 15)

It worked. The birds took to the roosts more readily than before. There was less crowding and the cold room idea was made more practical.

Major Thompson says, "In todays competitive market you must maintain a high average production record and the eggs must have size, weight and quality. To do that, requires that a hen go into her production schedule with an abundance of extra vitality. Cold room brooding with infra-red lamps gives that vitality."

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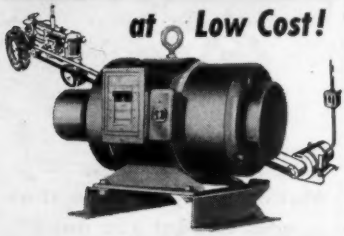

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Questions and Answers

Brooder Location

▶**Question:** *Can baby chicks be raised a few weeks in a battery type brooder in the basement?*
Mrs. H. H., Indiana

▶**Answer:** Chicks can be brooded in a regular battery brooder in the basement without any trouble. In fact, the battery can be placed in any building that is wired with sufficient capacity, as long as the chicks are not subjected to drafts. The same holds true for any type of electric brooding, whether you use hovers, the battery, or suspended infra-red heat lamps.

Feeder Wires

▶**Question:** *I would like to use an infra-red brooder to raise my chicks. My trouble is that I move my brooder house every year and it is in an orchard where I cannot use regular wires on account of the trees. Would it be possible to use either lead covered cable or plastic covered cable and lay it on top of the ground? I would only use it about two months each spring and then I would roll it up and put it away. Would the lead covered cable stand rolling up every year? What size wire would be needed for a four light brooder, using 250 watt bulbs?*
C. E. B., Maryland

▶**Answer:** You neglected to give the distance from the source of current to the brooder house. In order to determine wire size, you need to know the load and the length of the run. The brooder you wish to operate (four 250 watt infra-red lamps) amounts to just under 9 amperes. Based on a 10 ampere load, you could go up to 100 feet with No. 12 wire. Between 100 and 150 feet, you would have to use No. 10 wire. From 150 up to about 230 feet, you would have to use No. 8 wire, etc.

Type UF cable has been developed and is acceptable for direct earth burial. This would be suitable for providing current for your brooder house, but it should be laid under ground (a shallow trench will suffice). If it goes under a point of heavy traffic such as a driveway, it should be set in sand and protected by a plank over the sand. Unless you desire to go to a very expensive, extra heavy duty, rubber covered cable designed for the purpose, you should not plan on laying the wires on top of the ground. Unless you can raise the wires and perhaps support them from the trees at sufficient height to provide clearance for people as well as vehicles, we can only recommend that you put them underground. The lead covered cable should be treated the same as the UF plastic covered cable. It is considerably more expensive than the latter, but it would probably stand the repeated annual handling as well.

Water Heating

▶**Question:** *Where can I order a little gadget that can be attached to a faucet to heat the water?*
Mrs. F. B. S., Texas

▶**Answer:** Small water heaters, for attachments to faucets, are frequently unsafe. At best, they are apt to be unsatisfactory. If a heating element large enough to produce instantaneous hot water in any real quantity were installed, the standard outlet would not have sufficient capacity to feed it.

Our suggestion would be to investigate the storage type of electric water heater. These have units large enough to produce all the hot water you will need. As they are thermostatically controlled, they will maintain a set temperature. They are well insulated, and will retain the heat without wasted current.

Heat Lamp Thermostat

▶**Question:** *How should a thermostat be used with heat-lamp brooders? The actions of the chicks indicate that a brooder thermometer does not give a true picture.*
A. S. B., Connecticut

▶**Answer:** As you point out, a brooder thermometer does not give a true picture of the brooding conditions provided by a heat lamp.

Conventional brooders supply heat to maintain a fixed temperature under the brooder hover. Infra-red lamps supply heat to the chicks only. The amount of heat they provide should be the difference between that which the chick produces and the amount it needs. For this reason, thermostats to control the lamp are not placed where the infra-red rays will strike them. They are operated by room temperature only. Thus, during the day when sunlight warms the brooder house, the thermostat will shut off some of the lamps.

Electric Farm Equipment Buying Guide

An index of Electric Farm Productive Equipment and Home Appliances available from the manufacturers who have advertised in this magazine during the past year. For further information and name of your nearest dealer, write directly to these manufacturers, mentioning that you obtained their name from Electricity on the Farm Magazine. They will be glad to help you.

BARN CLEANERS
Badger Northland, Inc., Kaukauna, Wisc.
Clay Equipment Corp., Cedar Falls, Iowa
James Mfg. Co., Fort Atkinson, Wisc.
The Louden Machinery Co., Fairfield, Iowa
Patz Company, Pound, Wisc.
Starline, Inc., Harvard, Ill.

BATTERY CHARGERS
General Electric Co., Schenectady 5, N. Y.
Pioneer Gen-E-Motor Corp., Chicago 39, Ill.

BINS, GRAIN DRYING
American Crop Drying Co., Crystal Lake, Ill.
Clay Equipment Corp., Cedar Falls, Iowa
Habco Mfg. Co., Columbus, Nebraska

BLOWERS, GRAIN OR HAY
Burrows Equipment Company, Evanston, Ill.
Habco Mfg. Co., Columbus, Nebr.
Hartzell Prop. Fan Co., Piqua, Ohio

BROODERS, LAMB
The Rhinehart Mfg. Co., Inc., Ft. Wayne 7, Ind.

BROODERS, PIG
Ball Mfrs. Electrical Fittings, New Castle, Pa.
James Mfg. Co., Fort Atkinson, Wisc.
The Rhinehart Mfg. Co., Inc., Ft. Wayne 7, Ind.

BROODERS, POULTRY, BATTERY
James Mfg. Co., Fort Atkinson, Wisc.

BROODERS, POULTRY HOVER
James Mfg. Co., Fort Atkinson, Wisc.
The Rhinehart Mfg. Co., Inc., Ft. Wayne 7, Ind.

BROODERS, POULTRY, INFRARED
Ball Mfrs. Electrical Fittings, New Castle, Pa.
Harford Metal Products, Inc., Aberdeen, Md.
The Infra-Red Brooder Mfg. Co., Manheim, Pa.
The Rhinehart Mfg. Co., Inc., Ft. Wayne 7, Ind.

CABLE, SOIL HEATING
General Electric Co., Bridgeport 2, Conn.
Miller Mfg., St. Paul 2, Minn.
Smith-Gates Corp., Plainville, Conn.
Wrap-On Co., Chicago 10, Ill.

CHURNS
Alabama Mfg. Co., Birmingham 3, Ala.

CLEANERS, GRAIN & SEED
Burrows Equipment Co., Evanston, Ill.

CLIPPERS, ANIMAL
Andis Clipper Co., Racine, Wisc.
Sunbeam Corp., Chicago 50, Ill.

CLIPPERS, HEDGE
Sunbeam Corp., Chicago 50, Ill.

COMPRESSORS, AIR
Decker Mfg. Co., Rockford, Ill.

COOLERS, EGG
Master-Bilt Refrigeration Mfg. Co., St. Louis 7, Mo.

COOLERS, MILK
Master-Bilt Refrigeration Mfg. Co., St. Louis 7, Mo.
W. C. Wood Co., Ltd., Guelph, Ont., Canada

COW TRAINERS
Clay Equipment Corp., Cedar Falls, Iowa
James Mfg. Co., Fort Atkinson, Wisc.
Starline, Inc., Harvard, Ill.

DE-BILLERS
Natl. Agric. Supply Co., Fort Atkinson 40, Wisc.

DEHORNERS, CALF
General Electric Co., Schenectady 5, N. Y.
The Rhinehart Mfg. Co., Inc., Ft. Wayne 7, Ind.
Sunbeam Corp., Chicago 50, Ill.

DE-ICERS, STOCK TANK
The Rhinehart Mfg. Co., Inc., Ft. Wayne 7, Ind.
Siebring Mfg. Co., George, Iowa
Smith-Gates Corp., Plainville, Conn.

DRAINAGE WELLS
Knickerbocker Stamping Co., Parkersburg, W. Va.

DRIERS, CROP
Amer. Crop Drying Equip. Co., Crystal Lake, Ill.
Clay Equipment Corp., Cedar Falls, Iowa
Delco Products Div., Gen. Motors Corp., Dayton 1, Ohio
Habco Mfg. Co., Columbus, Nebraska
The Louden Machinery Co., Fairfield, Iowa

DRILLS, ELECTRIC PORTABLE
Dayton Electric Mfg. Co., Chicago 12, Ill.

DRINKING CUPS, CATTLE
Clay Equipment Corp., Cedar Falls, Iowa
Gardner Mfg. Co., Horicon, Wisc.
James Mfg. Co., Fort Atkinson, Wisc.
The Louden Machinery Co., Fairfield, Iowa

ELEVATORS, PORTABLE
Burrows Equipment Co., Evanston, Ill.
James Mfg. Co., Fort Atkinson, Wisc.

FANS, BARN & POULTRY VENTILATING
Amer. Mach. &Metals, Inc., E. Moline, Ill.
Argus Mfg. Co., Chicago 51, Ill.
Clay Equipment Corp., Cedar Falls, Iowa
Dayton Electric Mfg. Co., Chicago 12, Ill.
Hartzell Prop. Fan Co., Piqua, Ohio
James Mfg. Co., Fort Atkinson, Wisc.
The Louden Machinery Co., Fairfield, Iowa
Starline, Inc., Harvard, Illinois

FANS, CROP DRYING
Amer. Crop Drying Equip. Co., Crystal Lake, Ill.
Clay Equipment Corp., Cedar Falls, Iowa
Delco Products Div., Gen. Motors Corp., Dayton 1, Ohio
Habco Mfg. Co., Columbus, Nebr.
Hartzell Prop. Fan Co., Piqua, Ohio
The Louden Machinery Co., Fairfield, Iowa

FEEDERS, MECHANICAL CATTLE
Clay Equipment Corp., Cedar Falls, Iowa
James Mfg. Co., Fort Atkinson, Wisc.
Starline, Inc., Harvard, Illinois

FEEDERS, MECHANICAL POULTRY
James Mfg. Co., Fort Atkinson, Wisc.

FENCE CONTROLLERS, ELECTRIC
Electro-Line Products Corp., Saukville, Wisc.
Gardenhour Mfg. Co., Waynesboro, Pa.
Safgard Div., Grand Sheet M. P. Co., Melrose Park, Ill.
Shox-Stok, Inc., Wellington, Ohio

FREEZERS
General Electric Co., Louisville 2, Ky.
Hotpoint Co., Chicago 44, Ill.
Kelvinator Div., Amer. Motors, Detroit 32, Mich.

GENERATORS, STAND-BY
Fairbanks, Morse & Co., Chicago 5, Ill.
Katolight Corp., Mankato, Minn.
Master Mechanic Mfg. Co., Burlington, Wisc.
D. W. Onan & Sons, Inc., Minneapolis 14, Minn.
Pioneer Gen-E-Motor Corp., Chicago 39, Ill.
Winpower Mfg. Co., Newton, Iowa

GLUE POTS
General Electric Co., Schenectady 5, N. Y.

GRAIN ROLLERS
H. C. Davis Sons Mill Mchny. Co., Bonner Springs, Kans.
W. C. Wood Co., Ltd., Guelph, Canada

GRINDERS, FEED
C. S. Bell Co., Hillsboro, Ohio
Belle City Engineering Co., Racine, Wisc.
Burrows Equipment Co., Evanston, Ill.
H. C. Davis Sons Mill Mchny. Co., Bonner Springs, Kans.
Decker Mfg. Co., Rockford, Ill.
Fairbanks, Morse & Co., Chicago 5, Ill.
Horvick Mfg. Co., Moorhead, Minn.
W. C. Wood Co., Ltd., Guelph, Ont., Canada

GRINDERS, TOOL
The Brown-Brockmeyer Co., Dayton 1, Ohio
Dayton Electric Mfg. Co., Chicago 12, Ill.

GROOMERS, CATTLE
Sunbeam Corp., Chicago 50, Ill.

HAY FINISHERS
Amer. Crop Drying Equip. Co., Crystal Lake, Ill.
Clay Equipment Corp., Cedar Falls, Iowa
Delco Products Div., Gen. Motors Corp., Dayton 1, Ohio
Habco Mfg. Co., Columbus, Nebr.
The Louden Machinery Co., Fairfield, Iowa

HEATERS, AIR, FAN TYPE
Clay Equipment Corp., Cedar Falls, Iowa
Electromode Corp., Rochester 3, N. Y.
Fairbanks, Morse & Co., Chicago 5, Ill.
General Electric Co., Schenectady 5, N. Y.
James Mfg. Co., Fort Atkinson, Wisc.

HEATERS, LIQUID, IMMERSION TYPE
General Electric Co., Schenectady 5, N. Y.
James Mfg. Co., Fort Atkinson, Wisc.
The Rhinehart Mfg. Co., Inc., Ft. Wayne 7, Ind.
Smith-Gates Corp., Plainville, Conn.

HEATERS, MILKHOUSE
Clay Equipment Corp., Cedar Falls, Iowa
Electromode Corp., Rochester 3, N. Y.
General Electric Co., Schenectady 5, N. Y.
James Mfg. Co., Fort Atkinson, Wisc.

HEATERS, PUMP HOUSE
Electromode Corp., Rochester 3, N. Y.

HEATERS, STOCK TANK
The Rhinehart Mfg. Co., Inc., Ft. Wayne 7, Ind.
Siebring Mfg. Co., George, Iowa
Smith-Gates Corp., Plainville, Conn.

HEATERS, WATER PIPE
General Electric Co., Bridgeport 2, Conn.
Miller Mfg. Co., St. Paul 2, Minn.
Smith-Gates Corp., Plainville, Conn.
Wrap-On Company, Chicago 10, Ill.

HEATERS, WATER (NON PRESSURE)
Babson Bros., Inc. Chicago 23, Ill.
Fairbanks, Morse & Co., Chicago 5, Ill.
General Electric Co., Louisville 2, Ky.
James Mfg. Co., Fort Atkinson, Wisc.
Kelvinator Div., Amer. Motors, Detroit 32, Mich.
Safgard Div., Grand Sheet M. P. Co., Melrose Park, Ill.
W. C. Wood Co., Ltd., Guelph, Ont., Canada

HOISTS, GENERAL PURPOSE
Flinchbaugh Co., York, Pa.
The Louden Machinery Co., Fairfield, Iowa

HYDRANTS, FROST PROOF
Fairbanks, Morse & Co., Chicago 5, Ill.
Flint & Walling Mfg. Co., Kendallville, Ind.
F. E. Myers & Bro. Co., Ashland, Ohio
Strajaflo Products, Fort Wayne 1, Ind.
Joseph A. Vogel Co., Wilmington 99, Del.

INCUBATORS
James Mfg. Co., Fort Atkinson, Wisc.

INSECT CONTROL
Gardenhour Mfg. Co., Waynesboro, Pa.
Gardner Mfg. Co., Horicon, Wisc.
Insect Electrocutor Co., Cincinnati 38, Ohio

INSULATORS, ELECTRIC FENCE
North Central Plastics, Inc., Ellendale, Minn.

IRRIGATION EQUIPMENT
Habco Mfg. Co., Columbus, Nebr.
Natl. Rainbird Sales & Eng. Co., Azusa, Calif.

LAMPS, BULBS & TUBES (ALL TYPES)
General Electric Co., Cleveland 12, Ohio
Sylvania Electric Products, New York 19, N. Y.

LIGHTING FIXTURES, YARD & BARN
Sylvania Electric Products, New York 19, N. Y.

LIGHTNING PROTECTION
Security Mfg. & Contracting Co., Burlington 21, Wisc.

MILKING MACHINES
Babson Bros. Co., Chicago 23, Ill.
W. C. Wood Co., Ltd., Guelph, Ont., Canada

MIXERS, CONCRETE
Fairbanks, Morse & Co., Chicago 5, Ill.

MIXERS, FEED
C. S. Bell Co., Hillsboro, Ohio
Belle City Engineering Co., Racine, Wisc.
Burrows Equipment Co., Evanston, Ill.
H. C. Davis Sons Mill Mchny Co., Bonner Springs, Kans.
Fairbanks, Morse & Co., Chicago 5, Ill.

MOTORS
The Brown-Brockmeyer Co., Dayton 1, Ohio
Century Electric Co., St. Louis 3, Mo.
Dayton Electric Mfg. Co., Chicago 12, Ill.
Fairbanks, Morse & Co., Chicago 5, Ill.
General Electric Co., Schenectady 5, N. Y.

PASTEURIZERS, HOME TYPE
Electronic Specialties Co., Chicago 10, Ill.
Safgard Div., Grand Sheet M. P. Co., Melrose Park, Ill.
Waters Conley Co., Rochester, Minn.

PIPE, PLASTIC
Yardley Plastics Company, Columbus 15, Ohio

PUMPS, COMPLETE WATER SYSTEM
Aermotor Co., Chicago 8, Ill.
Berkeley Pump Co., Berkeley 2, Calif.
Dayton Electric Mfg. Co., Chicago 12, Ill.
Dempster Mill Mfg. Co., Beatrice, Nebr.
Fairbanks, Morse & Co., Chicago 5, Ill.
Flint & Walling Mfg. Co., Kendallville, Ind.
Goulds Pumps, Inc., Seneca Falls, N. Y.
A. Y. McDonald Mfg. Co., Dubuque, Iowa
F. E. Myers & Bro. Co., Ashland, Ohio
Robbins & Myers, Springfield, Ohio
Sumo Pumps, Inc., Stamford, Connecticut

PUMP HOUSES, HEATED
Decker Mfg. Co., Rockford, Ill.

PUMP-JACKS
Fairbanks, Morse & Co., Chicago 5, Ill.
Flint & Walling Mfg. Co., Kendallville, Ind.
A. Y. McDonald Mfg. Co., Dubuque, Iowa
F. E. Myers & Bro. Co., Ashland, Ohio

PUMPS, CELLAR DRAIN
Dayton Electric Mfg. Co., Chicago 12, Ill.
Fairbanks, Morse & Co., Chicago 5, Ill.
Flint & Walling Mfg. Co., Kendallville, Ind.
Goulds Pumps, Inc., Seneca Falls, N. Y.
L. R. H. Labaw Co., Belle Mead, N. J.
A. Y. McDonald Mfg. Co., Dubuque, Iowa
F. E. Myers & Bro. Co., Ashland, Ohio

PUMPS, IRRIGATION
Berkeley Pump Co., Berkeley 2, Calif.
Dempster Mill Mfg. Co., Beatrice, Nebr.
Fairbanks, Morse & Co., Chicago 5, Ill.
Flint & Walling Mfg. Co., Kendallville, Ind.
Goulds Pumps, Inc., Seneca Falls, N. Y.
A. Y. McDonald Mfg. Co., Dubuque, Iowa
F. E. Myers & Bro. Co., Ashland, Ohio
Sumo Pumps, Inc., Stamford, Conn.

PUMPS FOR OIL & FUEL
Flint & Walling Mfg. Co., Kendallville, Ind.
Goulds Pumps, Inc., Seneca Falls, N. Y.
A. Y. McDonald Mfg. Co., Dubuque, Iowa
F. E. Myers & Bro. Co., Ashland, Ohio

PUMPS, MOLASSES FOR ENSILAGE
Goulds Pumps, Inc., Seneca Falls, N. Y.

SAW SHARPENERS
Foley Mfg. Co., Minneapolis 18, Minn.

SHARPENERS, LAWN MOWER
Foley Mfg. Co., Minneapolis 18, Minn.

SHEARERS, SHEEP
Sunbeam Corp., Chicago 50, Ill.

SHELLERS, CORN
C. S. Bell Co., Hillsboro, Ohio
Burrows Equipment Co., Evanston, Ill.

SOLDERING IRONS
General Electric Co., Schenectady 5, N. Y.
Sunbeam Corp., Chicago 50, Ill.

SPRAYERS, PAINT
Dayton Electric Mfg. Co., Chicago 12, Ill.

SPRAYERS, LIVESTOCK
F. E. Myers & Bro. Co., Ashland, Ohio

SPRAYERS, VEGETABLE & FRUIT
F. E. Myers & Bro. Co., Ashland, Ohio

SPRINKLERS, LAWN
Yardley Plastics Co., Columbus 15, Ohio

STARTING SWITCHES, MOTOR
Dayton Electric Mfg. Co., Chicago 12, Ill.
General Electric Co., Schenectady 5, N. Y.

STOCK TANK FLOAT VALVES
The Rhinehart Mfg. Co., Inc., Ft. Wayne 7, Ind.
Safgard Div., Grand Sheet M. P. Co., Melrose Park, Ill.

SWITCHES, TIME CONTROLLED
General Electric Co., Schenectady 5, N. Y.
Paragon Electric Co., Two Rivers, Wisc.

TESTERS, MOISTURE
Burrows Equipment Co., Evanston, Ill.

THERMOSTATS
Clay Equipment Corp., Cedar Falls, Iowa
General Electric Co., Schenectady 5, N. Y.
James Mfg. Co., Fort Atkinson, Wisc.
Smith-Gates Co., Plainville, Conn.
Wrap-On Company, Chicago 10, Ill.

TOOLS, MECHANICS HAND
Champion DeArment Tool Co., Meadville, Pa.

UNLOADERS, SILO
Badger Northland, Inc., Kaukauna, Wisc.
James Mfg. Co., Fort Atkinson, Wisc.
Patz Company, Pound, Wisc.
Van Dale Farm Machines, Inc., Wayzata, Minn.

UNLOADERS, WAGON
Flinchbaugh Co., York, Pa.
Ideal Farm Equipment, Monticello, Iowa

WARMERS, POULTRY WATER
Miller Mfg. Co., St. Paul 2, Minn.
Smith-Gates Corp., Plainville, Conn.

WASHERS, EGG
Whirl-A-Way Egg Washer Co., Harrisburg, Pa.

WATERERS, HEATED, POULTRY
The Rhinehart Mfg. Co., Inc., Ft. Wayne 7, Ind.
Smith-Gates Corp., Plainville, Conn.

WATERERS, HEATED, STOCK
Clay Equipment Corp., Cedar Falls, Iowa
Nelson Mfg. Co., Cedar Rapids, Iowa
The Rhinehart Mfg. Co., Inc., Ft. Wayne 7, Ind.

WATER PURIFIERS
Sepco Corp., Pottstown, Pa.
Wallace & Tiernan, Inc., Belleville 9, N. J.

WATER TREATMENT
F. E. Myers & Bro. Co., Ashland, Ohio
Oshkosh Filter & Softener Co., Oshkosh, Wisc.
Wallace & Tiernan Inc., Belleville 9, N. J.
Webb Mfg. Co., Parkville, Mo.

HOUSEHOLD EQUIPMENT

AIR CONDITIONERS
General Electric Co., Louisville 2, Ky.
Hotpoint Co., Chicago 44, Ill.
Kelvinator Div., Amer. Motors, Detroit 32, Mich.

BED COVERINGS, ELECTRIC
General Electric Co., Bridgeport 2, Conn.
Sunbeam Corp., Chicago 50, Ill.

CLIPPERS, HOME HAIR
Electro Tool Corp., Racine, Wisc.

COFFEE MAKERS
Dormeyer Corp., Chicago 10, Ill.
General Electric Co., Bridgeport 2, Conn.
Sunbeam Corp., Chicago 50, Ill.

XUM

DEHUMIDIFIERS
Kelvinator Div., Amer. Motors, Detroit 32, Mich.

DISHWASHERS, AUTOMATIC
General Electric Co., Louisville 2, Ky.
Hotpoint Co., Chicago 44, Ill.

DISPOSAL UNITS, FOOD WASTE
General Electric Co., Louisville 2, Ky.
Hotpoint Co., Chicago 44, Ill.
Kelvinator Div., Amer. Motors, Detroit 32, Mich.

DRYERS, CLOTHES
General Electric Co., Louisville 2, Ky.
Hotpoint Co., Chicago 44, Ill.
Kelvinator Div., Amer. Motors, Detroit 32, Mich.

EGG COOKERS
Sunbeam Corp., Chicago 50, Ill.

FANS, ATTIC VENTILATION
Dayton Electric Mfg. Co., Chicago 12, Ill.

FANS, KITCHEN VENTILATION
Dayton Electric Mfg. Co., Chicago 12, Ill.

FANS, PORTABLE
Argus Mfg. Co., Chicago 51, Ill.
Dayton Electric Mfg. Co., Chicago 12, Ill.
General Electric Co., Bridgeport 2, Conn.
Singer Sewing Machine Co., New York 6, N. Y.

FILTERS, IRON REMOVAL
F. E. Myers & Bro. Co., Ashland, Ohio
Oshkosh Filter & Softener Co., Oshkosh, Wisc.
Webb Mfg. Co., Parkville, Mo.

FREEZERS, FARM FOOD
General Electric Co., Louisville 2, Ky.
Hotpoint Co., Chicago 44, Ill.
Kelvinator Div., Amer. Motors, Detroit 32, Mich.

FRYERS, DEEP FAT
Dormeyer Corp., Chicago 10, Ill.
Sunbeam Corp., Chicago 50, Ill.

FRY-PAN
Sunbeam Corp., Chicago 50, Ill.

GRILLS
General Electric Co., Bridgeport 2, Conn.

HEATERS, PORTABLE
Electromode Corp., Rochester 3, N. Y.
General Electric Co., Bridgeport 2, Conn.
Singer Sewing Machine Co., New York 6, N. Y.

HEATERS, WATER
Fairbanks, Morse & Co., Chicago 5, Ill.
General Electric Co., Louisville 2, Ky.
Hotpoint Co., Chicago 44, Ill.
Kelvinator Div., Amer. Motors, Detroit 32, Mich.
Monarch Range Co., Beaver Dam, Wisc.
Sepco Corp., Pottstown, Pa.

HEATING PADS
General Electric Co., Bridgeport 2, Conn.

HOT PLATES
General Electric Co., Bridgeport 2, Conn.

IRONS, ELECTRIC, DRY OR STEAM
Dormeyer Corp., Chicago 10, Ill.
General Electric Co., Bridgeport 2, Conn.
Singer Sewing Machine Co., New York 6, N. Y.
Sunbeam Corp., Chicago 50, Ill.

IRONERS
Kelvinator Div., Amer. Motors, Detroit 32, Mich.

MIXERS, FOOD
Dormeyer Corp., Chicago 10, Ill.
General Electric Co., Bridgeport 2, Conn.
Singer Sewing Machine Co., New York 6, N. Y.
Sunbeam Corp., Chicago 50, Ill.

MOTORIZING SET FOR SEWING MACHINE
Dayton Electric Mfg. Co., Chicago 12, Ill.
Singer Sewing Machine Co., New York 6, N. Y.

RANGES—COMBINATION
Monarch Range Co., Beaver Dam, Wisc.

RANGES, ELECTRIC
General Electric Co., Louisville 2, Ky.
Hotpoint Co., Chicago 44, Ill.
Kelvinator Div., Amer. Motors, Detroit 32, Mich.
Monarch Range Co., Beaver Dam, Wisc.
RCA Estate Appliance Corp., Hamilton, Ohio

REFRIGERATORS
General Electric Co., Louisville 2, Ky.
Hotpoint Co., Chicago 44, Ill.
Kelvinator Div., Amer. Motors, Detroit 32, Mich.

ROASTERS
General Electric Co., Bridgeport 2, Conn.

SEWING MACHINES
Singer Sewing Machine Co., New York 6, N. Y.

SHAVERS
Sunbeam Corp., Chicago 50, Ill.

SOFTENERS, WATER
Fairbanks, Morse & Co., Chicago 5, Ill.
F. E. Myers & Bro. Co., Ashland, Ohio
Oshkosh Filter & Softener Co., Oshkosh, Wisc.
Webb Mfg. Co., Parkville, Mo.

TIMERS
Paragon Electric Co., Two Rivers, Wisc.

TELEVISION
General Electric Co., Syracuse, N. Y.
Sylvania Electric Products, New York 19, N. Y.

TOASTERS
General Electric Co., Bridgeport 2, Conn.
Singer Sewing Machine Co., New York 6, N. Y.
Sunbeam Corp., Chicago 50, Ill.

VACUUM CLEANERS
General Electric Co., Bridgeport 2, Conn.
Sunbeam Corp., Chicago 50, Ill.

VIBRATORS
Beauty Appliance Co., Racine, Wisc.

WARMERS, BABY BOTTLE
Sunbeam Corp., Chicago 50, Ill.

WASHERS, CLOTHES
General Electric Co., Louisville 2, Ky.
Hotpoint Co., Chicago 44, Ill.
Kelvinator Div., Amer. Motors, Detroit 32, Mich.

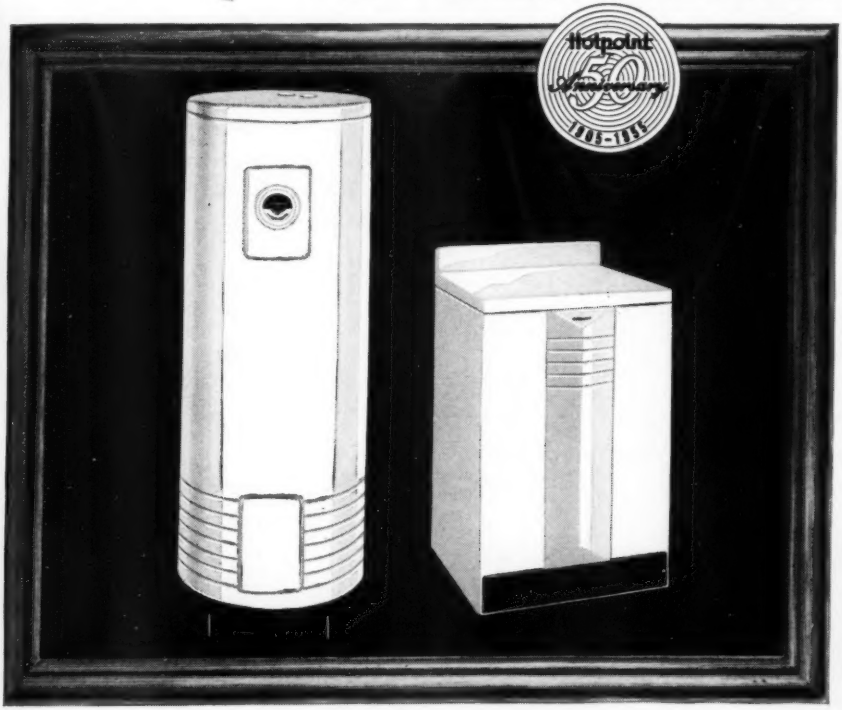
WATER CLOSETS, FROST PROOF
Joseph A. Vogel Co., Wilmington 99, Del.

If you want information about equipment that is not included in this index, write to Reader Service Dept., ELECTRICITY ON THE FARM Magazine, 24 W. 40th St., New York 18, N. Y.

Get plenty of hot water when you want it!

Hotpoint

AUTOMATIC WATER HEATERS



Exclusive Magic Circle® Heat Makes America's Largest-Selling Electric Water Heater America's Most Efficient!

NOW YOU CAN enjoy the luxury of safe, automatic *electric* water heating for only a few cents a day!

Because Hotpoint's exclusive Magic Circle Heat is as mindful of your budget as *you* are. Not a thimbleful of heat is wasted . . . it *all* goes into the water, for no heat-wasting flue is required!

With a Hotpoint—the *only* automatic electric water heater proved dependable in over 1,000,000 homes—you *automatically* have *lots* of hot water round the clock!

See the size just right for your family at your Hotpoint dealer's* soon.

Dealers are listed in most classified phone directories.

Guaranteed by Good Housekeeping

Only Water Heater with Magic Circle® Heat

Hotpoint

FIRST WITH THE FINEST FOR 50 YEARS!

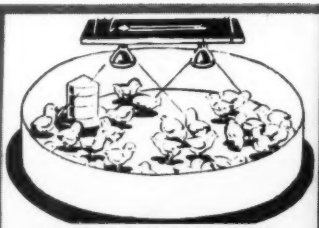
Look . . . Listen . . . and Laugh with OZZIE & HARRIET Every Week on TV!

Hotpoint Co. (A Division of General Electric Company), Chicago 44.

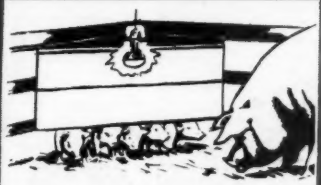
B E GOODALE
ASST PROF AT DAIRYING
CLEMSON S CAR
404

INFRA-RED HEAT LAMPS

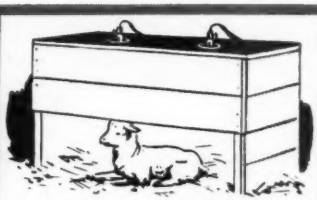
have a hundred farm uses!



CHICK BROODERS
dependable, even heat in any weather!



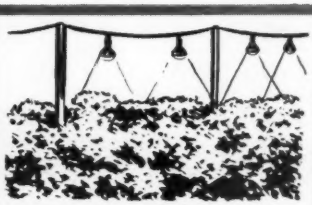
PIG BROODERS
safe, no flames, no fumes!



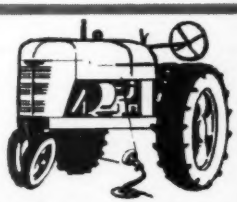
LAMB BROODERS
economical to buy!

SPOT HEATING
for milkhouse, storage rooms, farm shop!

PAIN RELIEF
for aching muscles.



FROST PROTECTION
for tender plants during cold snaps.



ENGINE WARMING
quick tractor and truck starts on cold mornings.

Drying paint, plaster, glue. • Thawing frozen pipes. • Defrosting refrigerators.
Protecting pumps, pipes from freezing.

Your *Electric Service* Company

We are sending you this magazine so that you may know the many advantages your electric service provides.

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